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RELATIONSHIP OF VARIABLES IN THE INNOVATIVE PROCESS TO THE SUCCESS OF EDUCATIONAL INNOVATIONS IN SELECTED ARKANSAS HIGH SCHOOLS

by

Robert Alfred Carlson

A Dissertation Submitted to the Faculty of the

DEPARTMENT OF SECONDARY EDUCATION

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF EDUCATION

In the Graduate College

THE UNIVERSITY OF ARIZONA

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THE UNIVERSITY OF ARIZONA

GRADUATE COLLEGE

I hereby recommend that this dissertation prepared under my direction by Robert Alfred Carlson

entitled RELATIONSHIP OF VARIABLES IN THE INNOVATIVE PROCESS TO THE SUCCESS OF EDUCATIONAL INNOVATIONS IN SELECTED ARKANSAS HIGH SCHOOLS

be accepted as fulfilling the dissertation requirement of the degree of Doctor of Education

Richard A. Krebs — Dissertation Director — 3/2/72 — Date

After inspection of the final copy of the dissertation, the following members of the Final Examination Committee concur in its approval and recommend its acceptance:*

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*This approval and acceptance is contingent on the candidate's adequate performance and defense of this dissertation at the final oral examination. The inclusion of this sheet bound into the library copy of the dissertation is evidence of satisfactory performance at the final examination.

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SIGNED: Robert A. Carlson

ACKNOWLEDGMENTS

This writer wishes to express his sincere gratitude to Dr. Richard C. Krebs, major advisor of the writer, for his careful reading of the manuscript, for his many constructive suggestions offered throughout the study, and for his inspiring personal guidance.

The writer is especially grateful to his wife for the hours she spent typing the manuscript, for her patience and understanding, and to his children, Robert and Elizabeth, for their love and encouragement.

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ABSTRACT

The purpose of this study was to ascertain a relationship between the success of educational innovations in Arkansas high schools and the utilization of selected variables during the innovative process.

Two survey instruments were developed to collect data. The first survey provided data on the number of innovations implemented and their degree of success as rated by the high school principals. Innovations were categorized as curricular, technological, and organizational. The second survey identified variables which were utilized during the implementation of selected innovations. A "z" test was completed on each variable to determine the significant statistical difference in the utilization of the variable during the implementation of innovations rated highly successful and those rated not successful.

The following conclusions were based on data received from schools participating in this study.

1. The variable "To meet specific needs of students" was used as a reason for proposing curricular innovations by a significantly greater proportion of innovations rated highly successful than by innovations rated not successful.

2. The question concerning the per cent of teaching staff involved in the initial planning and implementation of the innovation provided two significant differences. One in the organizational category and another in the curricular category indicated that a greater proportion of innovations rated not successful had either no involvement or less than ten per cent of the teaching staff involved.
3. In the category of curricular innovations, teachers were involved in committee meetings or individual work outside of the school day in a significantly greater proportion of innovations rated highly successful than in innovations rated not successful.
4. The question concerning the ways in which members of the community were involved in the initial planning and implementation of the innovation yielded two significant differences in the technological category. Innovations rated not successful allowed the community to express their views and to serve on planning committees a greater proportion of times than innovations rated highly successful.
5. The district superintendents supported organizational innovations rated highly successful a significantly greater proportion of times through active participation in the planning of the innovation.

6. In the organizational category, a significantly greater proportion of innovations rated not successful indicated they had not needed or requested financial support.
7. Organizational innovations rated highly successful collected data to measure the effect of the innovation a significantly greater proportion of times than those innovations rated not successful.

CHAPTER I

THE PROBLEM AND HYPOTHESES

> The existing practice is perplexing; no one knows on what principle we should proceed--should the useful life, or should virtue, or should the higher knowledge be the aim of our training; all these opinions have been entertained.
>
> --Aristotle

Introduction

The American Association of School Administrators has suggested that "Schools, like other social institutions, are the product of the society in which they exist. They tend, therefore, to reflect in their objectives the needs and the desires of that society."[1] While on the one hand education is the product of society, on the other hand, society is shaped and molded, to a great extent, by the kind of education it demands and supports. That change in education should be paralleled by change in society is axiomatic, then, because of our philosophy of public education. During the past decade society has undergone more and greater changes than in any other period of history. Education, likewise, claims to have undergone extensive change;

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1. American Association of School Administrators, Thirty-first Yearbook, American School Curriculum, Washington, D. C., February, 1953, p. 16.

however, the question as to the degree of change and the effectiveness of change appears to remain largely unanswered.

Cawelti[2] has attempted to find some answers to this question in his assessment of educational innovations in high schools throughout the United States. In surveying 7,237 accredited high schools he listed 27 "important" innovations in curriculum, technology, and organization. Although there appeared to be much innovation in the schools, the national average for all schools surveyed was 6.1 of the twenty-seven selected innovations.

Of the three categories surveyed, curricular innovations were most numerous. The average adopted nationally was less than two of the eight curricular innovations included in the survey. As in the curricular category, the schools reported an average of less than two of the seven technological innovations included in the study. Organizational innovations, Cawelti reported, were less frequent than those in the former two categories. Because he had reported only on the frequency of the implementation of these innovations, with no effort to measure the success of the implementation of the innovation, researchers felt that further work was needed.

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2. Gordon Cawelti, "Innovative Practices in High Schools: Who Does What--and Why--and How," Nations Schools, LXXIX, No. 4 (April, 1967), 56.

Salmon[3] was one of those who made an effort to give further meaning to Cawelti's study by investigating factors relative to the retention or abandonment of innovations. In selected Arizona high schools, he found significant differences between schools that abandoned innovations and schools that continued innovations in utilization of the practices (1) considering specific needs of students and (2) analyzing the school's objectives. Salmon equated success with the retention of an innovation, and failure with the abandonment of an innovation.

This study explores yet another dimension by utilizing the degree of success of an innovation as rated by high school principals. The innovative process is considered as it applies in the following categories: curricular, concerning course content materials; technological, concerning use of mechanical and electronic hardware; and organizational, concerning the structure of the school program.

Statement of the Problem

Basic to the success of the innovation itself is the process by which it is implemented. This process is affected by variables such as student needs; involvement of

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3. Vincent M. Salmon, "The Retention or Abandonment of Educational Innovations in Selected Arizona High Schools" (Unpublished Doctoral Dissertation, The University of Arizona, Tucson, 1969), p. 73.

teaching staff, the students, and the community in planning of the innovation; and the measure of support for the innovation by the superintendent of schools.

The problem, then, follows: Is there a relationship between the success of educational innovations and the utilization of selected variables during the innovative process?

Hypotheses to be Tested

In the search for a solution to the problem as stated, the following hypotheses were tested:

Hypothesis 1

There is no significant difference in the extent of utilization of selected variables during the innovative process between curricular innovations rated highly successful and curricular innovations rated not successful.

Hypothesis 2

There is no significant difference in the extent of utilization of selected variables during the innovative process between technological innovations rated highly successful and technological innovations rated not successful.

Hypothesis 3

There is no significant difference in the extent of utilization of selected variables during the innovative

process between organizational innovations rated highly successful and organizational innovations rated not successful.

Justification of the Study

In its continuing struggle to meet the needs and demands of a dynamic society, education may best be characterized by its innovativeness. With a growing frequency of educational innovations, it becomes increasingly important to isolate the variables that may affect the innovative process and measure their effect. This is one of several studies undertaken in different geographical sections of the country that will contribute information concerning implementation of innovations. It is anticipated that the information reported in this study will provide educators with helpful clues concerning the process of innovating their high schools.

Assumptions Underlying the Research Problem

Basic to the testing of the above hypotheses and underlying the research problem are the following assumptions:

1. Within Arkansas high schools accredited by the North Central Association there are educational innovations.
2. The surveys will reflect an accurate assessment of the success of educational innovations and the

utilization of selected variables during the innovative process.

Delimitations of the Study

This study will be restricted to the Arkansas high schools accredited by the North Central Association, which respond to the survey instruments.

Definitions of Terms

1. Educational innovation--Any planned educational change made within a school system. The educational innovation need not be created by that school system, provided it is new to the school responding to the survey.
2. Curricular innovation--Any planned change in the course content or course structure used in that high school.
3. Technological innovation--Any planned change in the mechanical or electronic hardware (e.g., computer instruction, language laboratory) utilized in the educational process within that high school.
4. Organizational innovation--Any planned change in the educational structure of that high school (e.g., from self-contained classroom to team teaching, from rigid to flexible scheduling).

5. Variable--A selected characteristic or procedure utilized in the process of implementation of an educational innovation.

Summary

The challenge of the times has brought much change to education. Cawelti determined that six innovations were the average for a typical high school. Salmon found that the utilization of selected variables was related to the continuing or abandoning of innovations.

This study is directed to the question: Is there a relationship between the success of educational innovations and the utilization of selected variables during the innovative process?

A review of selected literature related to educational innovations is presented in Chapter II.

CHAPTER II

A REVIEW OF THE LITERATURE

The literature contains many studies on a variety of subjects related to educational innovation. These studies range from investigation of the school setting to the innovative process itself.

In view of the range of problems studied, this review of the literature is divided into four parts. The first part is concerned largely with the research done in what is typically referred to as the "Mort tradition,"[1] a series of studies of adaptability which were conducted prior to 1960. The second part of the review includes literature which questions some of the previous research relative to the basic causes for adaptability within school systems. Part three includes the literature related to attitudes, school climate, characteristics, and role definitions of educators who were involved in the innovative process. Role definitions are based on the study by Brickell in New York State. The final section is concerned with variables utilized during the innovative process and is directly related to the problem of this study.

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1. Everett M. Rogers, Diffusion of Innovations (New York: The Free Press of Glencoe, 1962), p. 39.

Literature Pertaining to the Research on Adaptability

Early research on the subject of educational innovation began in the 1930's at Columbia University under the sponsorship of Paul Mort.[2] The key concept in these studies was "adaptability," essentially a synonym for innovativeness. It was defined as "the capacity of a school to take on new practices and discard outmoded ones."[3]

A study carried out in Pennsylvania under the direction of Mort and Cornell[4] in 1941 sought to explain the slowness of schools to adopt improved practices. Adaptability was measured by the use of the Mort-Cornell "Guide for Self-Appraisal of School Systems." Nine adaptations were traced from the time they were introduced, observing their rate of spread throughout the State. This study indicated that change in school systems comes about through a slow process but follows a predictable pattern. Mort and Cornell concluded that the rate of diffusion among schools was characterized by a fifty-year time lag between the

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2. Ibid.

3. Ibid., pp. 39, 40.

4. Paul R. Mort, "Studies in Educational Innovation from the Institute of Administrative Research: An Overview," in Mathew B. Miles, Innovation in Education (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 318.

introduction of an innovation and its general acceptance by schools throughout the country.[5]

Further examination of the causes of the time lag in accepting change had been carried out at Columbia University. Ross[6] summarized more than 150 of these studies and concluded that per-pupil expenditure is the most important factor in determining adaptability of school systems.

Rogers,[7] in his book Diffusion of Innovations, discussed the results of the studies which Ross had summarized. He made the point that despite the number of studies on the adaptability of schools and the rate of diffusion, their contributions were of little significance or influence. This is emphasized in his statement:

> The extensive number of education diffusion studies at Columbia University makes one wonder why these 150 studies have gone relatively unnoticed. The lack of attention paid the Columbia education studies is characteristic both of other researchers in the education tradition and of those in other diffusion research traditions.[8]

The principal conclusions from these early studies were summarized by Mort as follows:

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5. Ibid.

6. Donald H. Ross, Administration for Adaptability (New York: Metropolitan School Study Council, 1958), p. 15.

7. Rogers, op. cit., p. 39.

8. Ibid., p. 42.

1. The best single predictor of adaptability (or innovativeness) among schools is education cost per pupil.

2. School systems with high adaptability were those where teachers were more highly trained, where administrators provided active support for innovations, and where the community favored modern practices.[9]

Literature Questioning Causes of Adaptability

Although Mort's studies on adaptability tended to support the conclusion that level of expenditure per pupil accounts for the varying rates of adoption of educational innovations, Carlson[10] took a different point of view. He contended that the school superintendent is a key factor and is not trapped by the local school budget. In his study, he interviewed sixty-one superintendents in Allegheny County (Pennsylvania) and forty-six superintendents in the State of West Virginia. His findings did not support the conclusion that level of expenditure per pupil accounts for varying rates of adoption of educational innovations.[11] Carlson submitted that the superintendent is at the focal point in the decision-making process regarding innovations, and whether he convinces his staff

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9. Mort, loc. cit.

10. Richard O. Carlson, Adoption of Educational Innovations (Eugene: The Center for the Advanced Study of Educational Administration, University of Oregon, 1965), p. 59.

11. Ibid., p. 63.

or is convinced by them, the superintendent must make the final decision.

The adaptability studies begun by Mort in the 1930's had indicated that there was a fifty-year time lag between the introduction of an educational innovation and its general acceptance by the country. Carlson,[12] also focusing on the varying rates of adoption of educational innovations, reported, however, that within five years after the introduction of modern math in the 1960's, it had been adopted by seventy-five per cent of the school districts in his sample. These differences in the rate of diffusion emphasized that there are other forces and factors which may have a direct impact on activities of school systems. For example, Brickell[13] had pointed out that the number of innovations introduced in New York State at least doubled within fifteen months after Sputnik I.

In the period from 1966 to 1969, thirty-four doctoral dissertations dealt with several aspects of educational innovation. A major subject of inquiry was the relationship of expenditure per pupil to innovativeness. There was a divergence in the conclusions reached, many supporting the premise that the amount of expenditures per

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12. Ibid., p. 67.

13. Henry M. Brickell, "State Organization for Educational Change: A Case Study and a Proposal," in Mathew B. Miles, Innovation in Education (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 495.

pupil determined the innovativeness of the school. Carlson, however, disagreed, suggesting that expenditure per pupil did not determine the innovativeness of the school. His conclusions received major support in other current research.

In a study using twenty-one small high schools in North Dakota, Hanson[14] chose 11 schools which were rated as innovative and compared them with 11 schools categorized as non-innovative. He found no significant difference between the two groups in per pupil expenditure. Similar conclusions were reached by Jacobs[15] in his study of curricular innovations in 138 selected public junior high schools in Michigan. For purposes of his study, a curricular innovation was considered to be a change to something new in the objectives, structure, and content of the curriculum. Again, no significant relationship was found between the number of curricular innovations in the junior high school and the expenditure per pupil.

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14. John O. Hanson, "A Descriptive Study of Basic Data and the North Dakota Small Schools," Dissertation Abstracts, XXVII, No. 6 (University Microfilms, Inc., December, 1966), 1587-A.

15. Jan W. Jacobs, "Leadership, Size, and Wealth as Related to Curricular Innovations in the Junior High School," Dissertation Abstracts, XXVII, No. 2 (University Microfilms, Inc., August, 1967), 354-A.

The conclusions reached by Currie[16] in his study of Oregon high schools provided further support of Carlson's premise. He defined innovativeness as the number of staff utilization innovations incorporated in high schools. He concluded that per-pupil expenditures were of negligible influence on innovativeness of high schools. Scofield's[17] findings also supported Carlson's conclusions. Having conducted a study among high schools in Kansas, he found that those high schools which tended to innovate were in the middle cost bracket of $476 to $542 per-pupil expenditure. Those high schools in the higher cost bracket of per-pupil expenditure, $543 to $692, did not report as many innovative practices.

In contrast to the findings in these dissertations, the conclusion that innovativeness is directly related to per-pupil expenditure found support in other studies. Preising[18] surveyed 105 Oregon and 309 California public

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16. Craig H. Currie, "Secondary School Principals Assessment of the Importance of Personal and Situational Factors in the Adoption of Innovations," Dissertation Abstracts, XXVII, No. 3 (University Microfilms, Inc., September, 1966), 624-A.

17. Bill H. Scofield, "A Study of Innovative Practices in Selected Comprehensive High Schools in Kansas," Dissertation Abstracts, International, XXX, No. 6 (University Microfilms, Inc., December, 1969), 2310-A.

18. Paul P. Preising, "The Relationship of Staff Tenure and Administrative Succession to Structural Innovation," Dissertation Abstracts, XXIX, No. 2 (University Microfilms, Inc., August, 1968), 447-A.

high schools. His study was based largely on structural innovations which he defined as those innovations requiring changes in the elements which order the operations and functions of the entire school. Contrary to the findings of previous studies, Preising found a significant relationship between expenditure per pupil and the number of structural innovations.

Marcum[19] surveyed the ten most innovative and the ten least innovative schools within each of the States of Oregon, Washington, Idaho, Nevada, and Utah. He found that, "There was a significant difference between expenditures per student for the most innovative and least innovative schools. Expenditures A.D.A. were higher in the most innovative schools."[20]

In a study of selected high schools in Upper New York State, Roosa[21] concluded that a higher rate of adoption of educational innovations was found in schools which had

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19. Reigo L. Marcum, "Organizational Climate and Adoption of Educational Innovations," Dissertation Abstracts, XXIX, No. 9 (University Microfilms, Inc., March, 1969), 2932-2933-A.

20. Ibid.

21. Jack L. Roosa, "A Study of Organizational Climate, Leader Behavior, and Their Relation to the Rate of Adoption of Educational Innovations in Selected School Districts," Dissertation Abstracts, XXIX, No. 10 (University Microfilms, Inc., April, 1969), 3397-A.

higher expenditures per pupil. Pafford[22] studied twelve selected school districts in Kentucky and found a significant relationship between innovation and local revenue devoted to education.

In view of the disparity among the total number of studies, a firm conclusion as to the relationship of per-pupil expenditure and innovativeness is difficult to reach. There appear to be as many studies whose findings indicate a significant relationship of expenditure and innovativeness as those which do not support such a conclusion. The type of innovations as well as other situational variables are factors which may have bearing in these studies.

Literature Pertaining to Attitudes, School Climate, Characteristics, and Role-Definition of Educators Involved in the Innovative Process

While the main emphasis of the studies of adaptability was on the level of financial expenditure, they also considered many other factors. Among these were characteristics of school districts, communities, administrators, and teachers. These factors have been the subject of investigation by others in recent studies. One such factor that received particular emphasis was the attitude of the

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22. William N. Pafford, "Relationships Between Innovation and Selected School Factors," Dissertation Abstracts, International, XXX, No. 5 (University Microfilms, Inc., November, 1969), 1786-A.

administrators. Mims[23] surveyed a random sample of superintendents, supervisors, and principals of large, medium, and small school districts in Arkansas to determine their attitudes toward the adoption or rejection of innovations in education. The following conclusions were drawn from the study:

1. The attitudes of superintendents, supervisors, and principals were favorable toward the twenty selected innovations.

2. The twenty selected innovations were not being used extensively in the public secondary schools of Arkansas.

3. Superintendents and principals were the main initiators of innovations.

4. Insufficient funds, personnel problems, and inadequate physical facilities were the major reasons given why the innovations were not being used.

5. There was a trend toward the innovations being adopted by superintendents, supervisors, and principals.

6. The attitudes of superintendents, supervisors, and principals were not influenced by age, race, educational level, time of attendance at college, years of experience as an administrator, size of district, and expenditure per pupil.

7. There was not a strong relationship between the attitudes of the administrators toward the innovations and the extent to which they were being used in the schools.[24]

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23. Crawford J. Mims, "Attitudes of Arkansas School Administrators Toward the Adoption or Rejection in the Public School," Dissertation Abstracts, XXIX, No. 5 (University Microfilms, Inc., November, 1968), 1369, 1370-A.

24. Ibid.

In a study of personality characteristics of school superintendents within the State of Idaho, Lawrence[25] found a significant correlation between the superintendent's personality and his willingness to accept change. This relationship was determined by six personality factors from Cattell's 16 Personality Factors Questionnaire and the superintendent's score on an innovation scale. Contrasting findings were reported by Addis[26] in his analysis of the perceptions of high school principals. He used the findings of the North Central Association Innovation Inventory to identify his sample of 150 high schools. No significant difference was found in the way principals from schools rated high-innovative, middle-innovative, and low-innovative perceived themselves, their positions, and administration in general.

While the two previously listed studies were concerned with administrators, Chambliss[27] focused on the

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25. Clifford J. Lawrence, "Personality Characteristics of School Superintendents Who Implement Innovation in the Public School," Dissertation Abstracts, XXIX, No. 5 (University Microfilms, Inc., November, 1968), 1397, 1398-A.

26. Winston C. Addis, "An Analysis of the Perceptions of Principals of High and Low Innovative Schools," Dissertation Abstracts, XXIX, No. 6 (University Microfilms, Inc., December, 1968), 1696-A.

27. E. J. Chambliss, "Attitudes of Teachers Adopting Innovations and the Relationships of These Attitudes to Other Variables," Dissertation Abstracts, XXIX, No. 12, Part 1 (University Microfilms, Inc., June, 1969), 4368-A.

attitudes of teachers. He attempted to determine their attitudes toward adopting educational innovations. Based on the responses from 197 public junior high school teachers in Abilene, Texas, he made the following recommendations:

1. Educators interested in promoting innovations must concentrate upon creating discontent with present outcomes.
2. Encouragement must be provided to overcome teachers' uncertainty toward the future and promote their adequacy with a new program.[28]

School climate as a factor in adoption of educational innovations was another subject of study. Hughes[29] used the Organizational Climate Descriptive Questionnaire developed by Halpin and Croft to conduct an investigation. He studied the organizational climate of selected highly innovative and non-innovative school districts in Ohio and found that innovative school districts as a group did reveal a more open climate than non-innovative school districts. This led him to conclude that one of the key variables in

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28. Ibid.

29. Larry W. Hughes, "The Organizational Climate Found in Central Administrative Offices of Selected Highly Innovative and Non-Innovative School Districts in the State of Ohio," Dissertation Abstracts, XXVII, No. 1 (University Microfilms, Inc., July, 1966), 73-A.

affecting change was the personal involvement of staff in the task of organization for change.

Contrasting results were obtained by LaMantia[30] in his study of organizational climate. Using results of the North Central Association Innovation Inventory, LaMantia identified twenty-two high schools in New York, New Jersey, and Connecticut as innovative or non-innovative. He found no relationship between the number of innovations adopted and the organizational climate of the eleven high schools rated innovative. Likewise, he found no relationship between the number of innovations adopted and the organizational climate of the eleven high schools rated non-innovative.

Carlson[31] emphasized the importance of studying the characteristics of chief school officials. His study of superintendents from West Virginia and Allegheny County (Pennsylvania), placed emphasis on the characteristics of professionalism, opinion leadership, and perception of innovativeness. The rate of adoption of modern math, programmed instruction, and team teaching was significantly related to these characteristics. This led to the

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30. Gerald P. LaMantia, "Innovation Adoption and Organization Climate: Their Relationship to the Job Satisfaction of High School Teachers," Dissertation Abstracts, International, XXX, No. 8 (University Microfilms, Inc., February, 1970), 3241-A.

31. Carlson, op. cit., p. 59.

conclusion that the innovativeness of a school may be determined somewhat by the characteristics of its administrator.

A study by Bradley[32] further supported this conclusion. Innovative and non-innovative characteristics of secondary principals were determined through a study of "common findings of research on innovation in education, agriculture, medicine, and industry."[33] These characteristics were ranked by 377 participants from county school systems in Ohio. The following characteristics were preferred:

1. Introduces and encourages new teaching ideas.
2. Helps his staff understand their goals.
3. Interprets student needs to his teachers.
4. Obtains parental and community cooperation with the school.
5. Is prone to inquiry and goes beyond common knowledge.
6. Is knowledgeable about educational research and curriculum design.[34]

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32. Larry G. Bradley, "Preferences of Selected Ohio County Educators on the Innovative and Non-Innovative Characteristics of Secondary Principals," Dissertation Abstracts, International, XXX, No. 9 (University Microfilms, March, 1970), 3662-A.

33. Ibid.

34. Ibid.

The position of the administrator in the process of adoption of innovation is a powerful one, according to Brickell. In his publication Organizing New York State for Educational Change Brickell states: "The administrator may promote or prevent innovation. He cannot stand aside or be ignored. He is powerful not because he has a monopoly on imagination, creativity, or interest in change--the opposite is common--but simply because he has the authority to precipitate a decision."[35]

In this study in New York State during 1961, Brickell[36] conducted a survey of change processes. His findings and recommendations were gleaned from unstructured interviews. In this report, Brickell defined the role which the community plays in the process of change within the local schools. He states that, "Parents and citizens groups in most communities do not exert a direct influence on the adoption of new types of instructional programs, but their influence is decisive when exerted."[37]

The administrator's role was regarded as that of a change agent. Brickell concluded that, "New types of instructional programs are introduced by administrators.

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35. Henry M. Brickell, Organizing New York State for Educational Change (Albany: The University of the State of New York, State Education Department, 1961), p. 503.

36. Ibid.

37. Ibid., p. 20.

Contrary to general opinion, teachers are not change agents for instructional innovations of major scope."[38]

Brickell considered planning for the innovation essential and stated that, "The most persuasive experience a school person can have is to visit a successful new program and to observe it in action."[39] He also regarded support of the innovation as being important when he noted that, "The most successful innovations are those which are accomplished by the most elaborate help to teachers as they begin to provide the new instruction."[40]

He also suggested that publicity be given to the teachers involved with the innovation. This was considered to be a factor in the success of the innovation, "The attention, encouragement, and recognition given to teachers by people outside the classroom during the introduction of new programs are among the strongest causes of their success."[41]

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38. Ibid., p. 22.
39. Ibid., p. 27.
40. Ibid., p. 31.
41. Ibid., p. 35.

Literature Pertaining to Variables in the Innovative Process

Prior to studies made of variables used in the innovative process, Cawelti[42] surveyed the status of innovations in 7,638 schools accredited by the North Central Association. This study, conducted in 1966 to determine the innovativeness of American high schools, used a questionnaire identifying twenty-seven selected innovations. Cawelti found that the nation's innovative average was six of these selected innovations. However, a large number of schools reported that they had abandoned some of these selected innovations. For example, SMSG mathematics had been abandoned by 439 schools; this represented six per cent of the total number of participating schools.

The Cawelti study precipitated an investigation by Salmon[43] of the process of implementing educational innovations. Salmon used the data from the Cawelti study to identify Arizona high schools which continued educational innovations and those which had abandoned educational innovations. He investigated selected variables related to the innovative process which might have a bearing on the

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42. Gordon Cawelti, "Innovative Practices in High Schools: Who Does What--and Why--and How," Nations Schools, LXXIX, No. 4 (April, 1967), 56.

43. Vincent M. Salmon, "The Retention or Abandonment of Educational Innovations in Selected Arizona High Schools" (unpublished Doctoral Dissertation, The University of Arizona, Tucson, 1969), p. 73.

continuation or abandonment of educational innovations. The variable, consideration of specific educational needs of the students, was utilized significantly more often during the innovative process by schools continuing educational innovations than by schools abandoning educational innovations. Also, the variable, studying school objectives, was utilized significantly more often during the innovative process by schools continuing educational innovations.

Additional variables that were not found to be statistically significant in the Salmon study but were considered important by the school administrators were:

1. Involvement of numerous teachers in the development of the innovation.
2. Provision for consultants during the development and evaluation phases of the innovation.
3. Acceptance of the innovation by the school board prior to the decision to implement the innovation.
4. Provision for students involved in the innovation to react to the innovation.[44]

Rubenow[45] investigated twenty-six variables which appeared to relate to the innovative process. His study was conducted among sixty Chicago suburban high schools. Administrators were asked to rate the degree of utilization

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44. Ibid., p. 79.

45. Robert C. Rubenow, "The Effect of the Innovative Process on the Retention and Abandonment of Educational Innovations in Chicago Suburban High School Districts" (unpublished Doctoral Dissertation, The University of Arizona, Tucson, 1971), p. 55.

of each variable during the implementation and evaluation of each innovation. A comparison was made between responses for innovations that were continued and those that were abandoned.

Three variables were found to be statistically significant at a .10 level of probability. The variable, "The building principal suggested the innovation, and participated actively in its adoption" significantly influenced the continuation of innovations.[46] A second variable, "The innovation was analyzed to determine whether it would be better able to meet the needs of the students than the method or program in operation at that time" was applied to continuing and abandoned innovations differently. The continuing innovations were significantly influenced by the consideration of this variable.[47] A third variable, "Student views were included in the evaluation of the innovation" was utilized significantly more extensively by innovations no longer in operation than continuing innovations.[48]

Summary

One cannot establish a constant time interval between the introduction of an educational innovation and

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46. Ibid., p. 81.

47. Ibid., p. 105.

48. Ibid., p. 122.

its general acceptance in the country. Mort concluded from his studies in the 1930's and the 1940's that there was a fifty-year time lag. When Carlson investigated the adoption of modern math in 1960, he found a five-year interval between the introduction and acceptance. These differences may reflect not only the changing economic conditions in the country, but the advancements made in the field of communications as well. It seems apparent that conclusions reached yesterday may or may not retain their relevancy today. From the depression of the thirties, through Sputnik and into the prosperous sixties, changing conditions have affected the adoption of educational innovations.

The search for a relationship between per pupil expenditure and innovativeness of a school has yielded inconsistent conclusions. Mort felt that per pupil expenditure was the best single predictor of innovativeness. This was not supported by Carlson in his 1960 study of innovations. Varying results were obtained in numerous doctoral dissertations completed from 1966 to 1969. However, the majority of the studies found no relationship between per pupil expenditure and innovativeness.

The administrator is considered to be a determining factor in the adoption of educational innovations. Both Mims and Brickell stated that the administrator is the primary initiator of innovations. Carlson concluded that the innovativeness of a school may be determined by the

characteristics of its administrator. This was also supported by Bradley. An administrator is in a position to make decisions that may encourage or discourage innovativeness.

Selected variables involved in the process of implementing innovations show a relationship to the continuation or abandonment of innovations. Salmon found that the variables, consideration of specific needs of students and studying school objectives, were utilized significantly more often by schools with continuing innovations in Arizona high schools.

Rubenow surveyed Chicago suburban high schools and found three variables significant. The suggestion of the innovation by the building principal significantly influenced the continuation of the innovation. Consideration of student needs also influenced continuing innovations, while the use of student views in the evaluation was found to a greater degree in abandoned innovations.

This study will be an extension of the work done by Salmon and Rubenow. The studies reviewed will be considered during the evaluation of this study.

CHAPTER III

DESIGN OF THE STUDY

This chapter includes a description of (1) the procedures used in the development of the instruments, (2) the population used in the study, (3) the process of data collection, and (4) the method of data analysis.

Development of Instruments

Two survey instruments were developed to gather data for this study. The first was designed to determine the status of innovations and their degree of success. The second survey instrument attempted to identify the variables which were utilized during the implementation process for each innovation.

First Survey Instrument

The review of the literature provided the basis of the instrument, along with the consultations of committee advisors. Guidance in determining the innovations to be surveyed was provided through examination of Cawelti's study.[1] The design of the instrument was approved by Mr. Curtis R. Swaim, Associate Commissioner for Instructional

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1. Gordon Cawelti, "Innovative Practices in High Schools: Who Does What--and Why--and How," Nations Schools, LXXIX, No. 4 (April, 1967), 56.

Services and North Central Representative for Arkansas. His endorsement was provided by a letter of approval which accompanied the cover letter and instrument (see Appendix A).

The instrument was designed to obtain the following information:

1. Demographic data on the high schools.
2. The number of innovations implemented and still operating.
3. The degree of success of each innovation reported.

Demographic data on the high schools described the enrollment and average annual per-pupil expenditure. High schools were classified in five enrollment categories, ranging from fewer than 300 pupils to more than 2,000 pupils. Six per-pupil expenditure categories were used to classify high schools ranging from less than $300 per pupil to more than $700 per pupil.

Principals were requested in the survey instrument to indicate all innovations introduced during the school years 1959-60 through 1969-70. Innovations no longer in operation were to be included with those still in operation. Principals also rated the degree of success of the innovations reported in the survey.

Innovations were divided into three categories:

1. Curricular innovations--any planned change of the course content or course structure used in that high school.
2. Technological innovations--any planned change in the mechanical or electronic hardware utilized in the educational process within the high school.
3. Organizational innovations--any planned change in the educational structure of the high school.

Cawelti[2] had used the same three categories of innovations in his survey of 7,327 accredited high schools, which was directed toward twenty-seven selected innovations. However, he had not permitted principals to write in innovations other than those listed. This survey instrument was designed to allow principals to write in other innovations and to recognize locally-prepared curriculum materials.

In order to allow principals adequate time for evaluation of each innovation as to its degree of success only those innovations which had been in operation for two or more years were selected for this study. Principals were asked to indicate the year in which the innovation had been implemented in the high school and to check those which were still in operation. Through a process of elimination it was

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2. Ibid.

then possible to determine which innovations had been implemented but were no longer operating.

Each principal was asked to rate the degree of success of each innovation reported on the first survey instrument. This rating was expected to reflect the principal's personal observations. Four ratings were utilized:

1. Highly Successful: The objectives of the innovation were met and there was a positive change.
2. Successful: Not all objectives were met and there was some positive change.
3. Not Successful: There was no change as a result of the innovation.
4. Failure: There was a negative change as a result of the innovation.

The three categories of educational innovations, curricular, technological, and organizational, were used to provide uniformity in the sample of innovations reported and to facilitate the analysis of data. The first of these, curricular innovations, was defined as one or more classes using, as a basic reference, a set of materials or a course outline that was regarded by the local school as being innovative. The materials could be locally prepared or purchased commercially.

The curricular category contained the following eight general areas:

1. Physics (i.e., PSCS)
2. Chemistry (i.e., Chem Study)
3. Mathematics (i.e., SMSG)
4. English
5. Humanities
6. Social Studies
7. Fine Arts
8. Practical Arts

Principals were provided an opportunity in the instrument to add specific innovations within the eight general areas. Additional space was provided to write in other curricular programs which did not come within these eight classifications named.

Seven technological innovations were listed in the survey instrument. The definitions of these technological innovations were essentially the same as those used by Cawelti.[3] They were defined as follows:

1. Television Instruction: One or more classes regularly using open or closed circuit television as a means of teaching courses for credit.

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3. Ibid.

2. Programmed Instruction: A course designed for independent use in which students regularly use programmed materials (without a machine).
3. Teaching Machine: A mechanical device which presents a computerized educational program designed to teach a student.
4. Language Laboratory: One or more foreign language classes use tapes and tape recorders to help the audio-lingual method of teaching.
5. Data Processing Equipment: Electronic accounting machines and computers are used for class scheduling, reporting marks, attendance, accounting, and so forth.
6. Telephone Amplification: One or more classes periodically arrange to amplify telephone conversations dealing with information being studied in class.
7. Simulation or Gaming: One or more classes periodically use a device to create realistic political or social situations in class for helping students to become involved in decision-making.

Principals were provided an opportunity in the instrument to write in other technological innovations which did not come within the definition of the seven innovations named.

In the category of organizational innovations, eleven were listed in the instrument. These definitions are also

similar to those used in the Cawelti[4] study. The organizational definitions were as follows:

1. Flexible Scheduling: The school operates on a variable schedule which starts with modules of five to twenty minutes and organizes the day into various combinations of these modules according to the different learning environments required.
2. Team Teaching: A course under the direction of two or more faculty members, all of whom participate directly in planning and meeting the class sessions.
3. College Credit Courses: High school students take advanced placement courses and examinations, or a similar kind of arrangement, whereby credit is given for college level courses.
4. Teacher Aides--Paraprofessionals: Use of non-degree persons for assisting teachers in essentially non-teaching duties such as evaluating student compositions, supervising halls, or checking papers.
5. Honor Study Halls: No teachers present in study halls; sometimes monitored by students.
6. Work-Study Program: A plan for integration of classroom work and practical experience through alternative attendance at class and employment in business,

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4. Ibid.

industry, or government. Distributive education programs may also be counted.

7. School-Within-School: An organizational design whereby a large secondary school is divided into smaller schools, each having its own administration.
8. Cultural Enrichment Programs: A regular program attempting to expose students to elements of society outside the school such as concerts, lectures, and museums.
9. Student Exchange Programs: At least one foreign student has attended your school for a year, and one of your students has spent a year in an overseas school as a part of an exchange program.
10. Optional Class Attendance: An attempt to encourage independent study by permitting students to have a choice as to whether or not they will attend class regularly.
11. Extended School Year: The total number of days students attend school (exclusive of summer sessions) is in the area of 200 days or more, or at least approximately two weeks in excess of what may be legally required.

Principals were provided an opportunity to add other organizational innovations to those defined in the instrument.

Second Survey Instrument

The second survey instrument was designed to identify variables or practices which were utilized during the innovative process. First, a list of variables relating to the process of implementing educational innovations was developed. Committee advisors and staff members at the Evaluative Programs for Innovative Curricula Center (Tucson, Arizona) contributed to the development of the list.

An advisory committee of fourteen professional educators, four from the State of Arkansas, was selected to evaluate the variables included in the preliminary draft of the second survey instrument. Selection of the advisory committee members was based upon their experience with innovative practices in secondary schools. The following criteria were used in selecting committee members.

1. Members should be knowledgeable, by virtue of training and experience, in development and implementation of educational innovations.
2. Members should represent a variety of specific interests in education.
3. Members should represent a broad geographical base.
4. Members should be interested in research and willing to participate in this evaluation.

Sixteen persons were invited by means of a personal letter to serve on the advisory committee. The letter,

outlining the nature of the project and the way in which they might become involved, and a copy of the preliminary draft of the second survey instrument were mailed on March 11, 1970. A stamped return envelope was enclosed. Recipients of the letter were asked to respond by deleting variables from the list or by adding variables to the list provided in the preliminary draft of the second survey instrument. Fourteen persons responded and then became the members of the advisory committee (see roster, Appendix B). The suggestions of the advisory committee were incorporated into the final draft of the second survey instrument. This instrument is contained in Appendix C and presented in Chapter IV along with the resulting data.

The second survey instrument was made up of twelve questions concerning the innovative process. Principals were asked to respond to the questions which applied to selected innovations in their schools, as previously reported. These innovations were specified at the beginning of the second instrument.

Population

The selection of the sample was determined through a two-step process. This procedure is illustrated in Figure 1. In step one, the first survey instrument was sent to all of the Arkansas high schools accredited by the North Central Association. From the 148 high schools, the

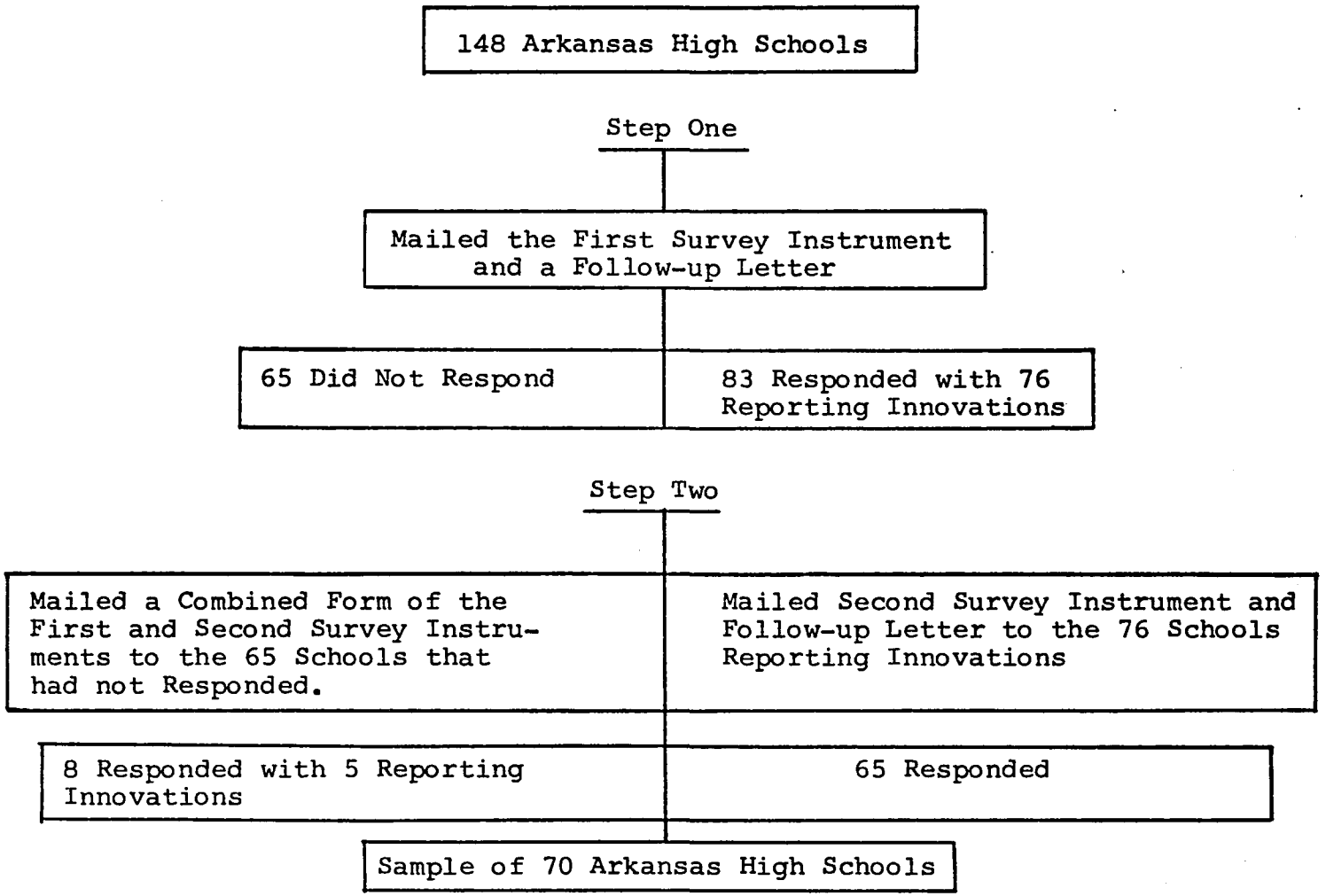

Figure 1. Sample Selection Procedure

original population for the study, eighty-three returned the first survey instrument. Seventy-six of these eighty-three high schools reported innovations.

In step two, the second survey instrument was sent to the seventy-six schools reporting innovations. Sixty-five of these high schools responded. Another attempt was made to include the sixty-five high schools that did not respond to the first survey instrument or to a follow-up letter. They were mailed a combined form of the first and second survey instruments. Eight responded with five reporting innovations. These five high schools reporting innovations along with the sixty-five high schools that initially responded to both survey instruments formed the sample of seventy high schools.

The enrollment of the seventy high schools at the time the survey was taken is presented in Table I. It should be noted that 62 of the sample high schools had enrollments of less than 1,000 pupils.

The level of per-pupil expenditure at the time of the survey is shown in Table II. Fifty of the sample high schools reported that their average annual per-pupil expenditures were in the range of $300 to $500.

Process of Data Collection

The data for this study were collected by mail. The first survey instrument, including the letter of

Table I. Enrollment of the Seventy High Schools Participating in the Survey

Enrollment	High Schools
Fewer than 300	20
300 to 500	18
500 to 1,000	23
1,000 to 2,000	8
More than 2,000	0
No response	1
Total	70

Table II. Average Annual Per-Pupil Expenditure of the Seventy High Schools Participating in the Survey

Expenditure	High Schools
Less than $300	6
$300 to $400	29
$400 to $500	21
$500 to $600	1
$600 to $700	4
More than $700	0
No response	9
Total	70

introduction, Swaim's letter of approval, and a stamped return envelope was mailed on February 18, 1970, to 148 high school principals. Forty-eight of these principals responded to the first mailing. A follow-up letter (see Appendix D), another copy of the first survey instrument, and a stamped return envelope were mailed on March 13, 1970, to the one hundred principals who did not respond to the first mailing. Thirty-five principals responded to the follow-up letter. The forty-eight principals responding to the first mailing, plus the thirty-five principals responding to the follow-up letter, provided data from eighty-three schools.

The innovations reported on the first survey instrument were grouped under the general categories curricular, technological, and organizational. Then a selection was made of one innovation per category for each school. Thus, each principal was asked to provide data on not more than three selected innovations.

The second survey instrument was mailed to the principals together with a letter of explanation and a stamped return envelope on April 24, 1970. A follow-up letter (see Appendix E), another copy of the second survey instrument, and a stamped return envelope were mailed on May 13, 1970 to the principals who had not responded to the second survey instrument.

On April 28, 1970, a combined form of the first and second survey instruments, a letter of explanation, and a stamped return envelope, were mailed to the principals of the sixty-five high schools not responding to the first survey instrument or follow-up letter (see Appendix F). Of these sixty-five, eight principals responded. Three principals reported no innovations in their high schools; five reported innovations which were included with those of the other sixty-five high schools responding. This formed a total sample of seventy Arkansas high schools.

Method of Analysis

By means of the first survey instrument a list of innovations was provided which was used in the developing of an assessment of innovations in the Arkansas high schools participating in the survey. The assessment indicated the number of innovations implemented and the number of those no longer being operated by the participating high school (see Appendix G).

Data reported on the school enrollment, the per-pupil expenditure, and the degree of success of each innovation were recorded on data processing cards by a key punch. These data were sorted into curricular, technological, and organizational categories and a computer program was used to obtain the number of responses to each of the questions on the second survey instrument.

The utilization of the variables in the process of implementing innovations within the curricular, technological, and organizational categories is illustrated and discussed in Chapter IV. A "z" test was used to determine whether the proportion of responses for innovations rated highly successful and not successful differed significantly for each variable.

Summary

Surveys were designed to determine the extent to which Arkansas high schools had innovated, the degree of success of the innovations, and the practices utilized in the implementation of selected innovations. Two survey instruments were developed to collect data. The first instrument provided data on the number of innovations implemented and their degree of success. These data were tabulated manually. The second instrument identified variables or practices utilized in the process of implementing selected innovations. A computer program was utilized to tabulate these data. In all cases the surveys were conducted by mail.

CHAPTER IV

PRESENTATION OF DATA

The data are presented in three sections, (1) the results of the first survey instrument, (2) the results of the second survey instrument, and (3) the testing of the hypotheses.

Results of the First Survey Instrument

The survey instrument was sent to 148 Arkansas high schools, of which eighty-three returned the survey, reporting a total of 366 innovations currently operating and fifty-three innovations no longer currently operating. This means that each reporting high school had an average of 5.0 innovations implemented during the school years 1959-60 through 1969-70.

Table III illustrates the number of specific innovations which were operating within the eighty-three reporting schools at the time the survey was taken. For example, twelve innovative programs in physics, fifteen in television instruction, and eight in flexible scheduling were reported by the principals of the eighty-three high schools as being in operation at the time of the survey.

Of the innovations designated as curricular, physics (twelve) and humanities (twelve) were reported as having the

Table III. Innovations Reported Currently Operating

Curricular	Number	Technological	Number	Organizational	Number
Physics	12	Television Instruction	15	Flexible Scheduling	8
Chemistry	22	Programmed Instruction	10	Team Teaching	9
Mathematics	23	Teaching Machines	13	College Credit Courses	6
English	26	Language Laboratory	47	Teacher Aides	18
Humanities	12	Data Processing Equipment	2	Honor Study Halls	20
Social Studies	18	Telephone Amplification	4	Work-Study Programs	20
Fine Arts	22	Simulation or Gaming	8	School-Within-School	1
Practical Arts	17	Other Innovations	0	Cultural Enrichment Programs	14
Other Programs	10			Student Exchange Programs	4
		Total	99	Optional Class Attendance	0
Total	162			Extended School Year	1
				Other Innovations	4
				Total	105

lowest number of innovations. Comparatively more innovations were reported in mathematics (twenty-three), chemistry (twenty-two), and fine arts (twenty-two), while English (twenty-six) was reported as having the highest number of innovations.

In the category of technological innovations, the use of a language laboratory (forty-seven) was reported most frequently. Telephone amplification (four) and data processing equipment (two) were reported as having the least usage.

Considerable spread is evident in the number of innovative programs reported in the category of organizational innovations. Honor study halls (twenty) and work-study programs (twenty) were both reported as being in operation by the largest number of schools. The use of teacher aides (eighteen) and cultural enrichment programs (fourteen) were also reported with considerable frequency. Optional class attendance (zero) was not reported as being used by any of the schools. No opportunity was given, however, for the schools to report the extent of use of these programs. For example, the number of team teaching programs in a given school or the number of teacher aides employed was not asked, so these reports should not be interpreted as a measure of the extent to which the programs were used.

Table IV lists the number of schools which reported innovations no longer currently operating. Whereas twenty-three schools had reported innovations in mathematics operating at the time of the survey, eight schools reported innovations in mathematics which were no longer operating. This represents the highest rate of abandonment in curricular innovations.

Few technological innovations were abandoned, the greatest number being those of the language laboratory (four). In comparison with the forty-seven language laboratories which were reported in operation, this represents a small number.

In the category of organizational innovations, the highest number of programs abandoned is that of honor study halls (nine). Team teaching (five) has the second highest number of abandoned programs. Fourteen cultural enrichment programs were operating at the time of the survey; none were reported as having been abandoned.

Results of the Second Survey Instrument

The second survey instrument was first mailed to the seventy-six schools which had reported innovations in response to the first survey. Each school was asked to report on one specific innovation selected from each of the three categories, curricular, technological, and organizational. Sixty-five of these schools responded.

Table IV. Innovations Reported No Longer Currently Operating

Curricular	Number	Technological	Number	Organizational	Number
Physics	1	Television	2	Flexible Scheduling	0
Chemistry	4	Programmed Instruction	1	Team Teaching	5
Mathematics	8	Teaching Machines	0	College Credit Courses	0
English	2	Language Laboratory	4	Teacher Aides	3
Humanities	1	Data Processing Equipment	0	Honor Study Halls	9
Social Studies	2	Telephone Amplification	1	Work-Study Programs	3
Fine Arts	2	Simulations or Gaming	0	School-Within-School	0
Practical Arts	2	Other Innovations	0	Cultural Enrichment Programs	0
Other Programs	0	Total	8	Student Exchange Programs	1
Total	24			Optional Class Attendance	0
				Extended School Year	0
				Other Innovations	0
				Total	21

In order to include the sixty-five schools which had not responded to the first survey, they were mailed a combined form of the first and second survey instruments. An additional opportunity was provided to participate in the study, by permitting these schools to select the innovations upon which they wished to report. Eight of these schools responded with five reporting innovations.

From these seventy high schools, 133 survey instruments were returned, providing data on the utilization of selected variables during the implementation of the innovations reported. The rating of innovations within the three chosen categories is presented in Table V. Not successful and failure ratings are grouped for the analysis of the data. Not enough principals utilized the rating of failure to warrant keeping these ratings separate. Most of the innovations (seventy-four) were rated successful with the fewest (twenty-one) being rated not successful. The total number under each of the curricular, technological, and organizational categories is fairly equal.

The responses to the twelve survey questions concerning the planning and implementation of 133 innovations at seventy Arkansas high schools are presented in Table VI. Principals were permitted to check one or more of the variables listed, as answers to each question.

Data from the second survey instrument as presented in Tables V and VI are further analyzed in Figures 2 through

Table V. Rating of Innovations

Rating	Curricular	Technological	Organizational	Total
Highly Successful (H)	16	9	13	38
Successful (S)	25	29	20	74
Not Successful (N)	9	5	7	21
Total	50	43	40	133

Table VI. Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations		
	Curricular	Techno-logical	Organiza-tional
1. Why was the innovation proposed?			
a. To meet specific needs of students.	H--14 S--22 N-- 4	H-- 6 S--23 N-- 2	H--13 S--19 N-- 7
b. To improve teaching techniques.	H-- 7 S--11 N-- 1	H-- 6 S--20 N-- 4	H-- 3 S-- 8 N-- 1
c. To improve the curriculum.	H--12 S--14 N-- 7	H-- 3 S--12 N-- 4	H-- 5 S-- 8 N-- 1
d. To improve staff communication.	H-- 4 S-- 1 N-- 0	H-- 0 S-- 4 N-- 0	H-- 1 S-- 5 N-- 0
2. By whom was the innovation proposed?			
a. District Superintendent	H-- 3 S--12 N-- 3	H-- 3 S--15 N-- 0	H-- 9 S--10 N-- 1
b. District Curriculum Specialist	H-- 3 S-- 3 N-- 4	H-- 4 S-- 6 N-- 2	H-- 4 S-- 3 N-- 1
c. Building Principal	H--11 S--15 N-- 3	H-- 5 S--14 N-- 4	H--10 S--14 N-- 6

H--Highly Successful
S--Successful
N--Not Successful

Table VI.--Continued Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations: Curricular	Techno-logical	Organiza-tional
d. Classroom Teacher(s)	H--13 S--15 N-- 6	H-- 6 S--13 N-- 5	H-- 4 S--11 N-- 0
3. What did the person responsible for planning a study of the innovation do?			
a. Consulted with specialists.	H--11 S--15 N-- 3	H-- 8 S--17 N-- 2	H-- 4 S--11 N-- 2
b. Visited model schools.	H-- 5 S-- 7 N-- 2	H-- 4 S-- 9 N-- 1	H-- 2 S-- 4 N-- 1
c. Coordinated committee work.	H-- 9 S--10 N-- 2	H-- 2 S-- 4 N-- 2	H-- 4 S-- 9 N-- 2
d. Met with groups.	H-- 8 S-- 8 N-- 2	H-- 2 S-- 2 N-- 1	H-- 4 S-- 5 N-- 3
e. Collected information on materials available.	H--12 S--15 N-- 6	H-- 9 S--20 N-- 4	H--10 S--12 N-- 4
4. What per cent of the Teaching Staff was involved in the initial planning and implementation of the innovation?			
a. None.	H-- 2 S-- 0 N-- 0	H-- 1 S-- 6 N-- 0	H-- 0 S-- 4 N-- 4

Table VI.--Continued Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations		
	Curricular	Techno-logical	Organiza-tional
b. Less than 10%.	H-- 5 S--15 N-- 7	H-- 4 S--18 N-- 4	H-- 7 S-- 5 N-- 1
c. From 10% to 50%.	H-- 7 S-- 9 N-- 2	H-- 4 S-- 4 N-- 1	H-- 4 S-- 8 N-- 2
d. More than 50%.	H-- 2 S-- 1 N-- 0	H-- 0 S-- 1 N-- 0	H-- 2 S-- 3 N-- 0
5. In what ways were the initial teachers involved in the planning and implementation of the innovation?			
a. Visited other schools.	H-- 5 S-- 7 N-- 3	H-- 4 S--10 N-- 2	H-- 6 S-- 6 N-- 1
b. Given released time during the school day.	H-- 3 S-- 3 N-- 1	H-- 0 S-- 4 N-- 0	H-- 1 S-- 2 N-- 1
c. Attended workshops.	H-- 8 S--12 N-- 3	H-- 4 S-- 9 N-- 0	H-- 4 S-- 5 N-- 0
d. Involved in committee meetings or individual work outside of the school day.	H--15 S--16 N-- 5	H-- 6 S--11 N-- 4	H-- 7 S-- 8 N-- 3

Table VI.--Continued Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations		
	Curricular	Techno-logical	Organiza-tional
6. What per cent of the student body was involved in the initial planning and implementation of the innovation?			
a. None.	H-- 6 S--13 N-- 6	H-- 5 S--23 N-- 2	H-- 7 S--11 N-- 3
b. Less than 10%.	H-- 6 S--10 N-- 1	H-- 3 S-- 4 N-- 3	H-- 5 S-- 5 N-- 3
c. From 10% to 50%.	H-- 4 S-- 2 N-- 2	H-- 1 S-- 2 N-- 0	H-- 1 S-- 3 N-- 0
d. More than 50%.	H-- 0 S-- 0 N-- 0	H-- 0 S-- 0 N-- 0	H-- 0 S-- 1 N-- 1
7. In what way were the students involved in the initial planning and implementation of the innovation?			
a. Given the opportunity to express their views through open meetings.	H-- 8 S-- 6 N-- 3	H-- 2 S-- 2 N-- 2	H-- 4 S-- 6 N-- 3
b. Replied to a questionnaire.	H-- 3 S-- 4 N-- 2	H-- 1 S-- 1 N-- 0	H-- 1 S-- 2 N-- 2
c. Served on a planning committee.	H-- 5 S-- 1 N-- 1	H-- 0 S-- 0 N-- 0	H-- 1 S-- 0 N-- 2

Table VI.--Continued Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations		
	Curricular	Techno-logical	Organiza-tional
8. Was the community involved in the initial planning and implementation of the innovation?			
a. No.	H--13 S--21 N-- 9	H-- 8 S--26 N-- 3	H-- 9 S--15 N-- 6
b. Yes.	H-- 3 S-- 4 N-- 0	H-- 1 S-- 3 N-- 2	H-- 4 S-- 5 N-- 1
9. In what way were members of the community involved in the initial planning and implementation of the innovation?			
a. Given the opportunity to express their views through open meetings.	H-- 2 S-- 4 N-- 0	H-- 0 S-- 2 N-- 2	H-- 1 S-- 6 N-- 0
b. Replied to a questionnaire.	H-- 2 S-- 0 N-- 0	H-- 1 S-- 1 N-- 0	H-- 3 S-- 2 N-- 0
c. Served on a planning committee.	H-- 1 S-- 1 N-- 0	H-- 0 S-- 0 N-- 2	H-- 1 S-- 3 N-- 0
10. In what way did the district superintendent support this innovation?			
a. Expressed his interest in the innovation to the staff.	H--13 S--19 N-- 7	H-- 5 S--20 N-- 4	H-- 9 S--13 N-- 7

Table VI.--Continued Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations		
	Curricular	Techno-logical	Organiza-tional
b. Sought school board support for the innovation.	H-- 6 S--10 N-- 3	H-- 6 S--14 N-- 3	H-- 5 S--10 N-- 1
c. Made available district office support for the innovation.	H-- 6 S-- 6 N-- 3	H-- 4 S-- 6 N-- 2	H-- 4 S-- 6 N-- 1
d. Gave press releases in support of the innovation.	H-- 2 S-- 2 N-- 1	H-- 0 S-- 1 N-- 1	H-- 2 S-- 3 N-- 0
e. Actively participated in the planning of the innovation.	H-- 7 S-- 9 N-- 4	H-- 4 S--11 N-- 2	H-- 7 S-- 9 N-- 0
11. How was financial support provided?			
a. None needed or asked for.	H-- 9 S--13 N-- 4	H-- 0 S-- 5 N-- 1	H-- 4 S-- 7 N-- 5
b. District appropriated funds.	H-- 6 S--11 N-- 2	H-- 7 S--17 N-- 3	H-- 4 S-- 6 N-- 1
c. Federal funds were used.	H-- 3 S-- 6 N-- 2	H-- 5 S--17 N-- 1	H-- 5 S-- 9 N-- 1
d. State funds were used.	H-- 0 S-- 2 N-- 2	H-- 0 S-- 5 N-- 0	H-- 2 S-- 2 N-- 0

Table VI.--Continued Responses to Twelve Questions Concerning the Planning and Implementation of 133 Innovations at Seventy Arkansas High Schools

Questions and Variables	Categories of Innovations		
	Curricular	Techno-logical	Organiza-tional
12. What was included in the evaluation of the innovation?			
a. Data were collected to measure the effect of the innovation.	H-- 8 S-- 8 N-- 4	H-- 3 S-- 8 N-- 1	H-- 9 S-- 4 N-- 1
b. New measurement instruments were developed.	H-- 1 S-- 5 N-- 0	H-- 2 S-- 2 N-- 0	H-- 1 S-- 1 N-- 0
c. Teacher views were recorded.	H--10 S--12 N-- 7	H-- 2 S--22 N-- 4	H--11 S--13 N-- 3
d. Student views were recorded.	H--10 S--12 N-- 5	H-- 2 S--17 N-- 3	H-- 6 S--11 N-- 2
e. Community views were recorded.	H-- 2 S-- 3 N-- 1	H-- 0 S-- 2 N-- 0	H-- 1 S-- 3 N-- 0

37. Responses to each specific question concerning the planning and implementation of innovations as presented in Table VI are again grouped in the three categories, curricular, technological, and organizational. Each figure presents the per cent of responses by the classifications, highly successful, successful, and not successful.

Reasons for Proposing Innovations

The responses to the question "Why was the innovation proposed?" are illustrated by Figures 2, 3, and 4. In comparing Tables V and VI with Figure 2, it becomes evident that of the sixteen curricular innovations rated highly successful, 87.5 per cent had been proposed "to meet the specific needs of students." Of the twenty-five curricular innovations rated successful, eighty-eight per cent had been proposed for this reason. Only 44.4 per cent of the curricular innovations rated not successful had been proposed for this reason.

Continuing in the comparison of Tables V and VI with Figure 2, the response "to improve teaching techniques" was the reason given for 43.8 per cent of the highly successful curricular innovations; forty-four per cent of the curricular innovations rated successful; eleven per cent of the curricular innovations rated not successful.

The response "to improve the curriculum" was the reason given for seventy-five per cent of the highly

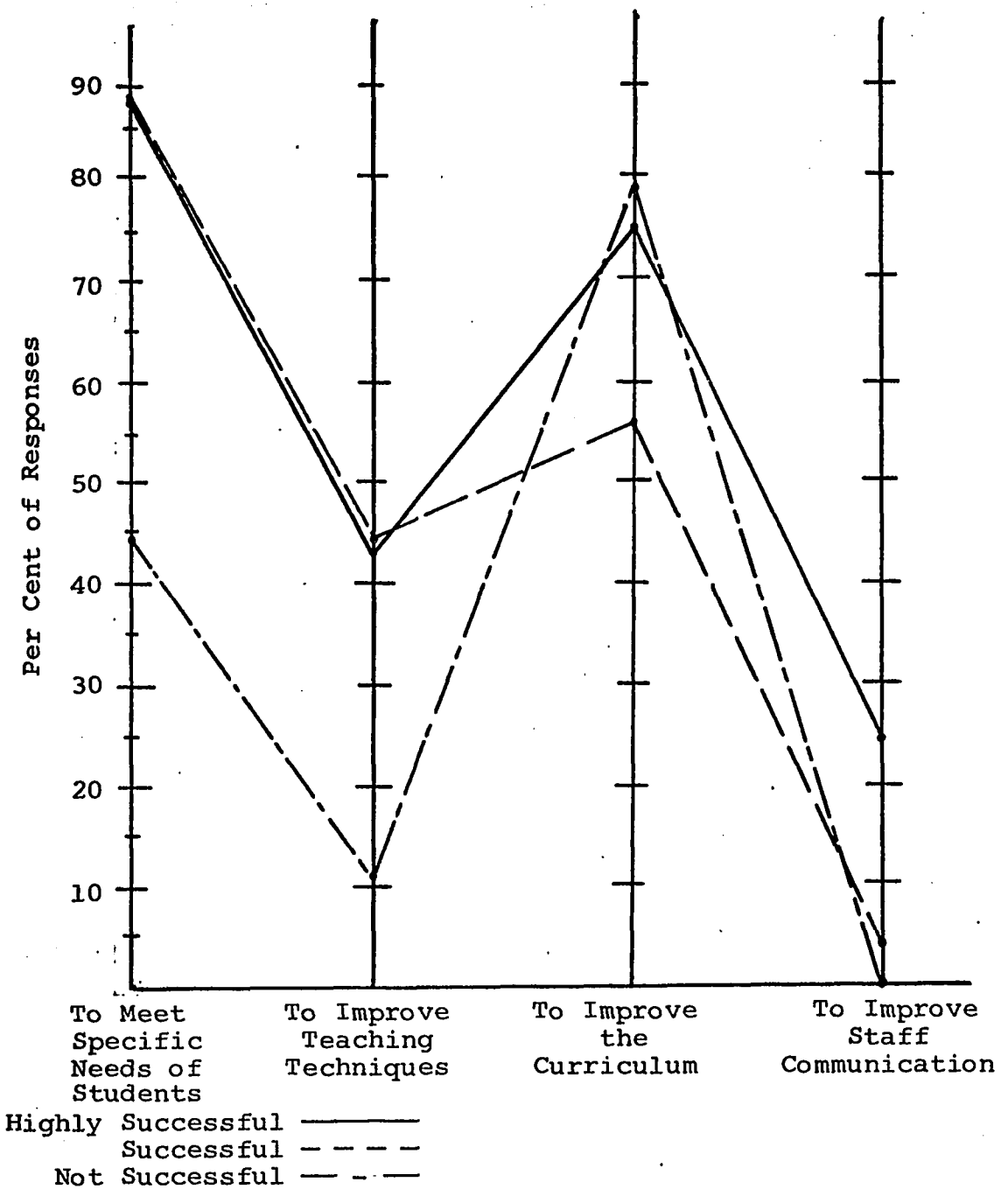

Figure 2. Curricular--Why was the innovation Proposed? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

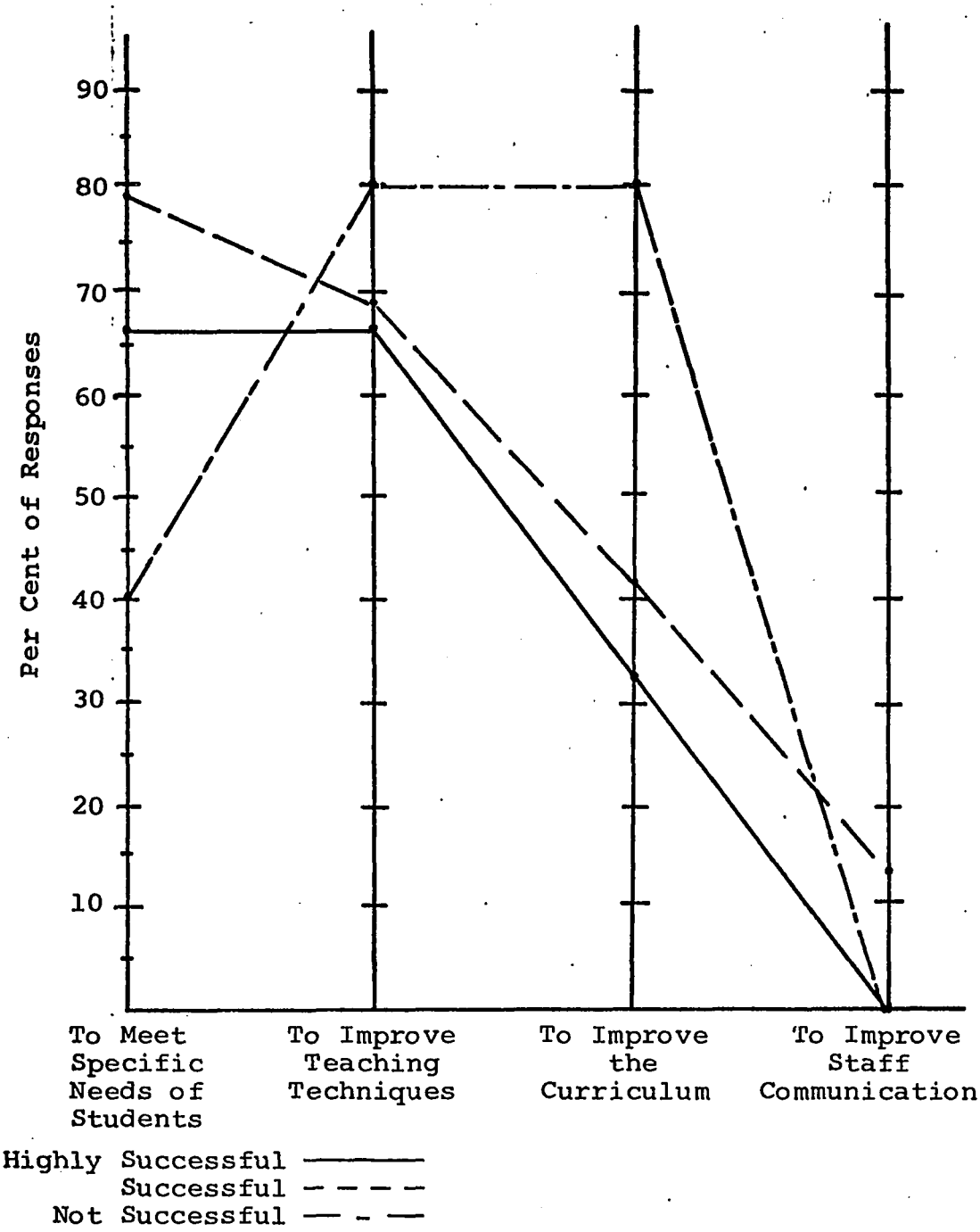

Figure 3. Technological--Why was the Innovation Proposed? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

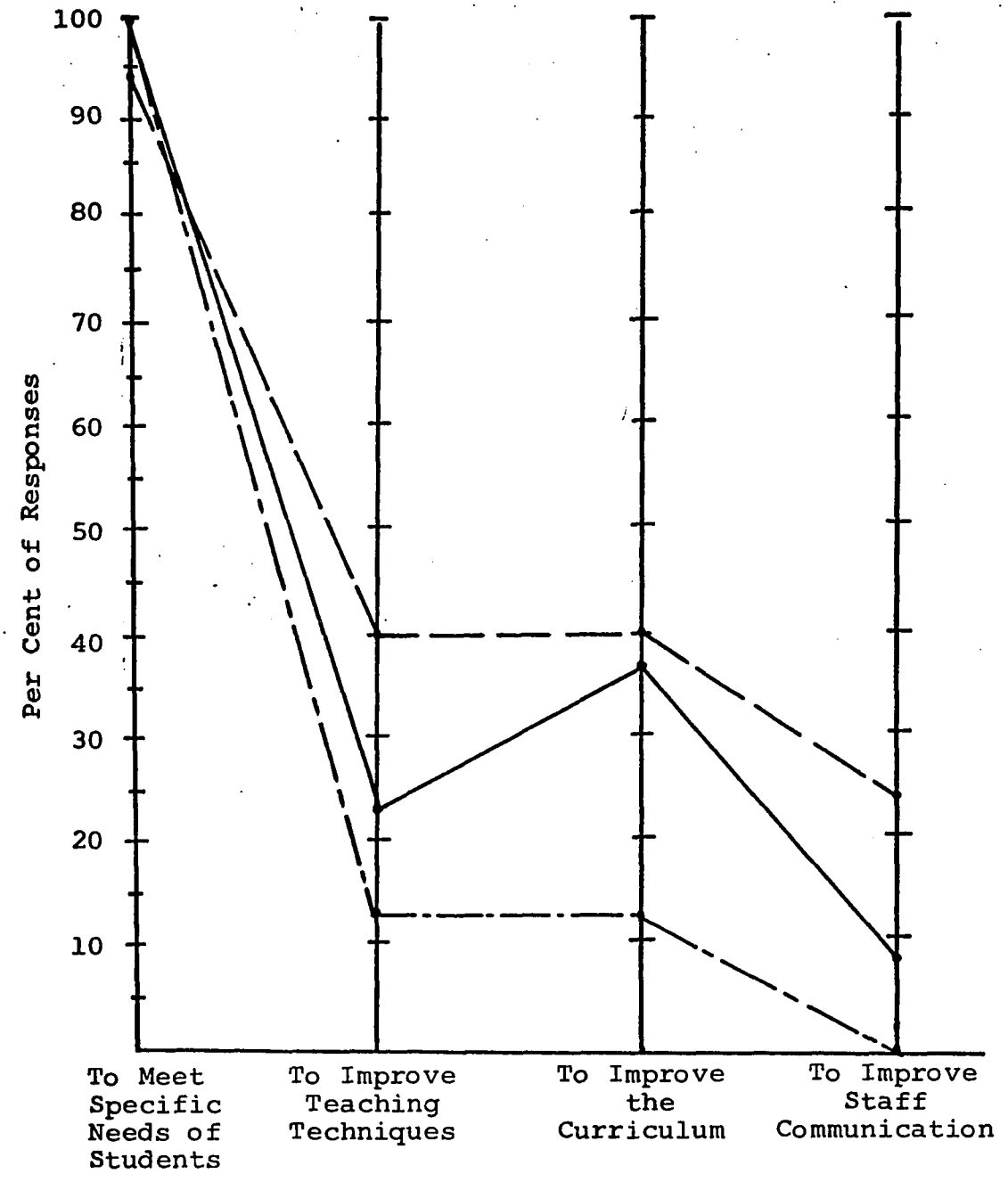

Figure 4. Organizational--Why was the Innovation Proposed? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

successful curricular innovations; fifty-six per cent of the curricular innovations rated successful; 77.8 per cent of the curricular innovations rated not successful.

The response "to improve staff communication" was the reason given for twenty-five per cent of the highly successful curricular innovations; four per cent of the curricular innovations rated successful; none of the curricular innovations rated not successful had been proposed for this reason.

Figure 2 indicates that the curricular innovations which had the greatest per cent of responses were those implemented "to meet specific needs of students" and "to improve the curriculum" regardless of their degree of success. The greatest difference among innovations rated highly successful and those rated not successful is in the utilization of the variables "to meet the specific needs of students" and "to improve teaching techniques."

In Figure 3 the highest per cent of responses of technological innovations in all three success ratings indicates that the innovation was implemented "to improve teaching techniques." It is also noted that no innovations rated highly successful and not successful were implemented "to improve staff communications." The greatest per cent of responses to innovations rated successful indicates that these had been implemented "to meet specific needs of students." Responses for each of the other three variables

decrease substantially, but all of the four variables had been utilized to some extent. The per cent of responses for innovations rated not successful is greater than the other two ratings in the utilization of the variables "to improve teaching techniques" and "to improve the curriculum." The variable "to improve the curriculum" was utilized to a greater extent by innovations rated not successful than those rated highly successful.

Figure 4 indicates that the variable "to meet the specific needs of students" is utilized to the greatest extent by all success ratings of organizational innovations. A lesser degree of response is given for the other three variables with innovations rated not successful utilizing these variables the least in each case. The greatest difference in per cent of response between innovations rated highly successful and those rated not successful is in the utilization of the variable "to improve the curriculum."

In reviewing Figures 2, 3, and 4, the variable "to meet the specific needs of students" appears to be utilized to the greatest degree in each of the three categories of innovations. The variable "to improve the curriculum" is next in degree of utilization. Differences in per cent of responses among the three success ratings of innovations is more evident in the curricular category of innovations than in either the technological or organizational categories.

People Who Propose Innovations

The responses to the question "By whom was the innovation proposed?" (Figures 5, 6, and 7) reflect the innovativeness of the classroom teacher in that they proposed the greatest per cent of innovations in the curricular and technological categories. The building principal likewise appears to have been influential in proposing innovations in these two categories, but he appears to have been most influential in the category of organizational innovations.

The district superintendent's most effective leadership in proposing highly successful and successful innovations appears in the category of organizational innovations. In the categories of curricular and technological innovations rated highly successful, he proposed fewer than twenty per cent in each case. However, of the successful innovations reported in all categories, the superintendent proposed approximately fifty per cent.

The role of the district curriculum specialists in proposing innovations rated successful is less apparent in all three categories than those of the superintendents, principals, and teachers.

It is further noted that the teachers proposed the greatest per cent of innovations rated both highly successful and not successful in the curricular and technological

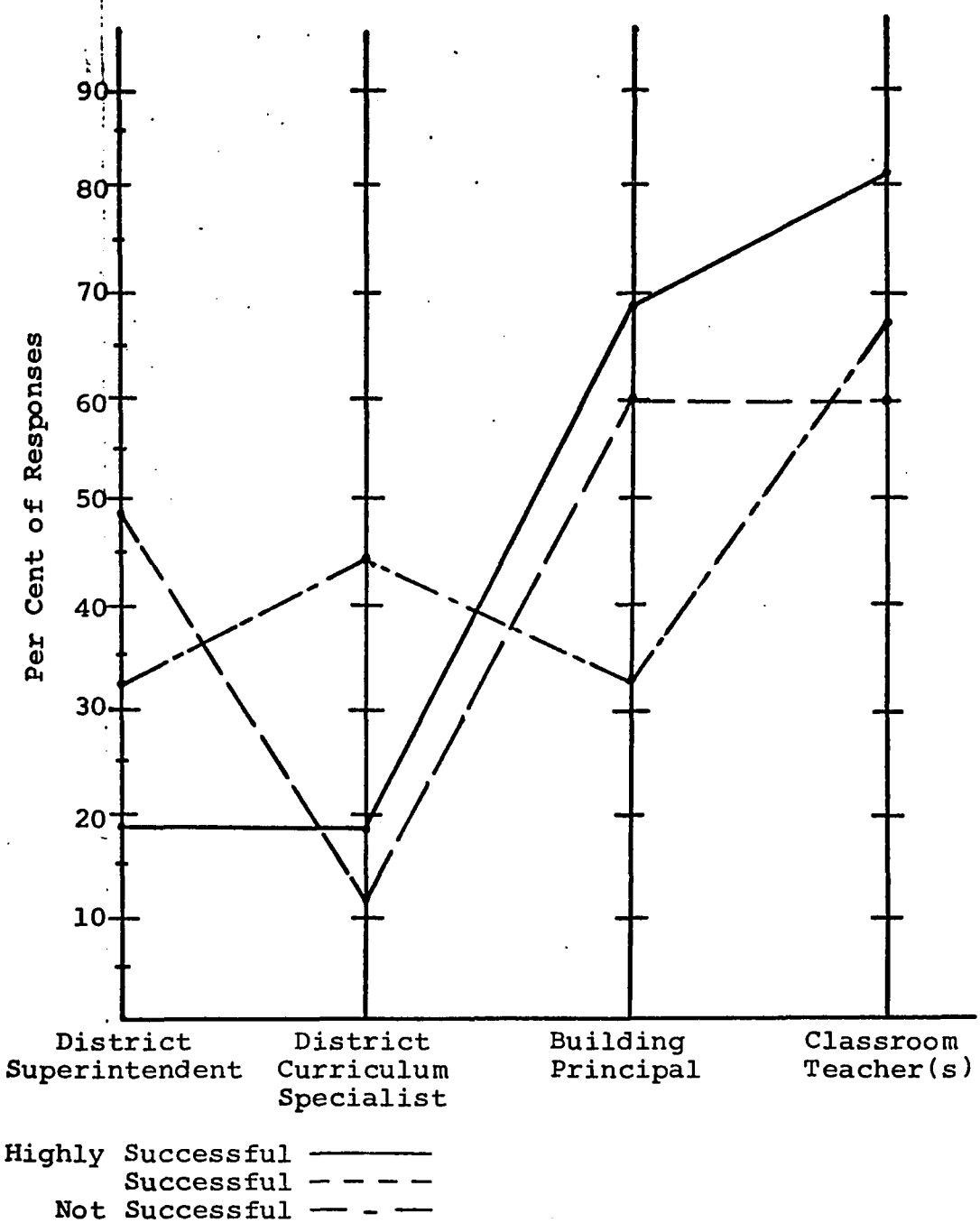

Figure 5. Curricular--By Whom was the Innovation Proposed? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

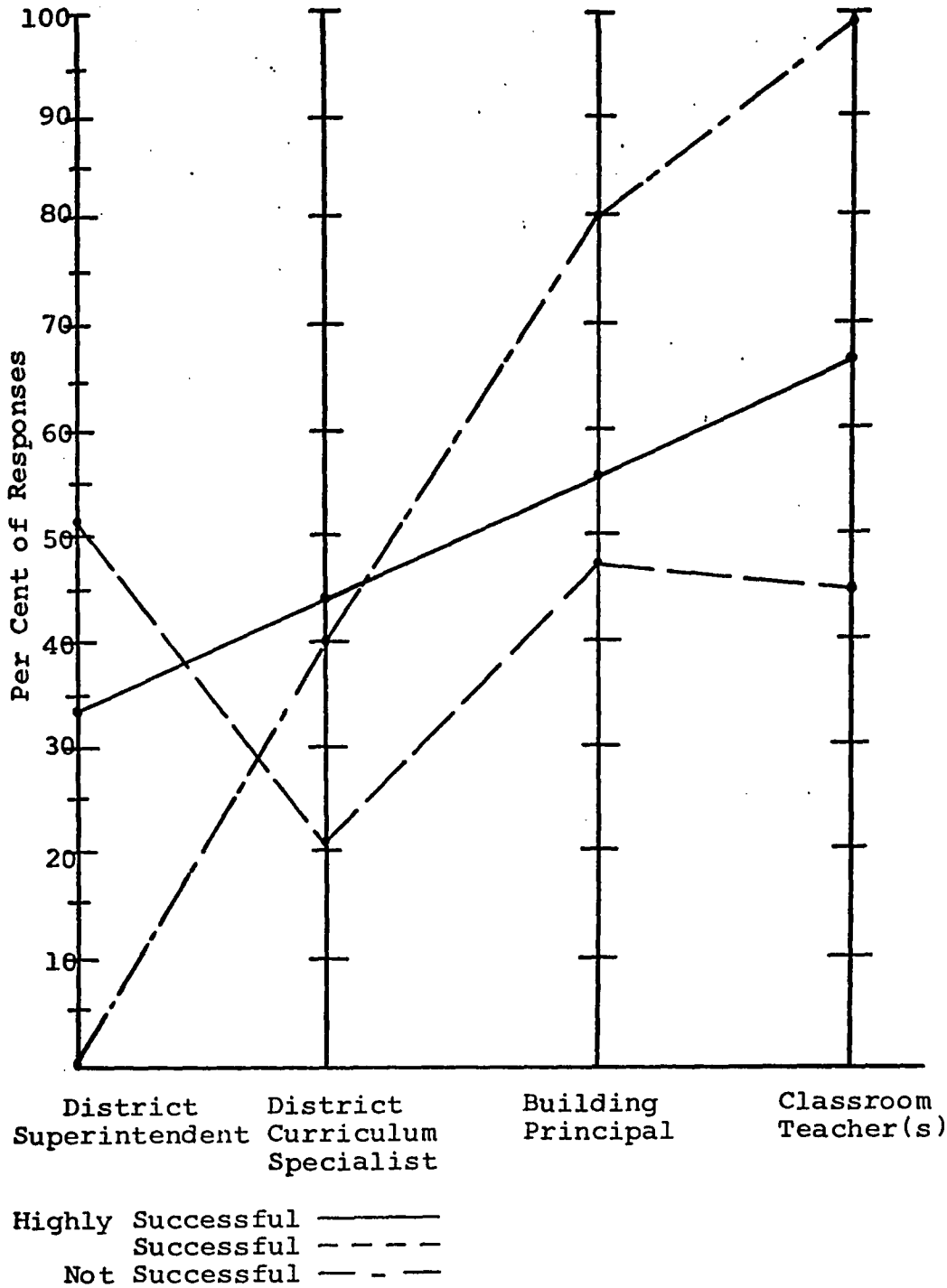

Figure 6. Technological--By Whom was the Innovation Proposed? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

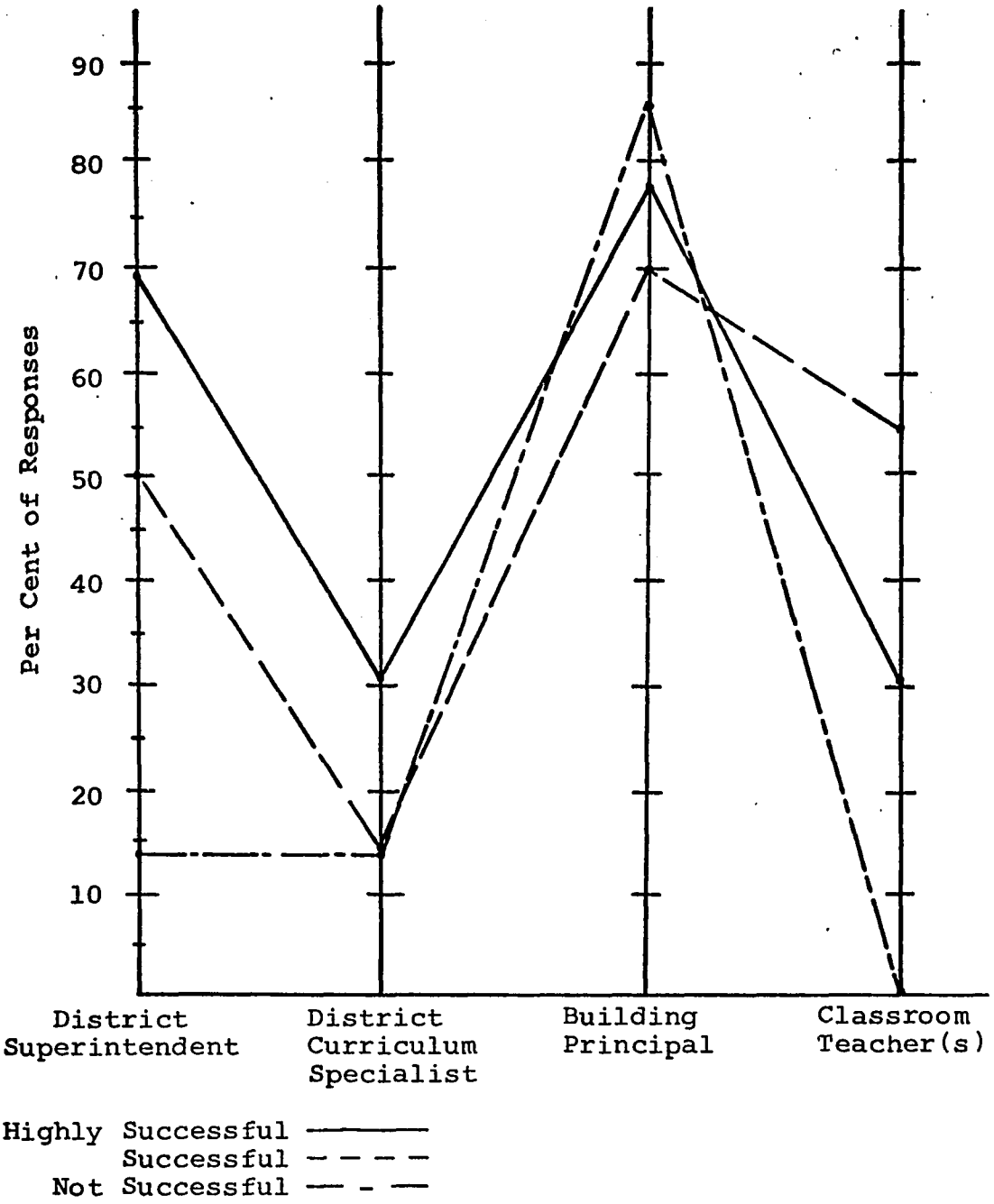

Figure 7. Organizational--By Whom was the Innovation Proposed? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

categories. The teachers did not propose any organizational innovations which were rated not successful.

Planning for a Study of the Innovation

Responses to the question "What did the person responsible for planning a study of the innovation do?" (Figures 8, 9, and 10) indicate that in all three categories regardless of the degree of success, the person responsible for planning a study of the innovation had collected information on materials available. This variable received the highest per cent of responses. Likewise, a comparatively high per cent of responses indicates that the person responsible for planning a study of the innovation had consulted with specialists.

The variable "visiting model schools" received the lowest per cent of responses of the innovations rated highly successful in the categories of curricular and organizational innovations. Technological innovations which were rated highly successful received the highest per cent of responses.

The variables, "coordinated committee work" and "meeting with groups," although reported by a comparatively high per cent of responses of the innovations rated highly successful in the curricular category, received the lowest per cent of responses in the technological category.

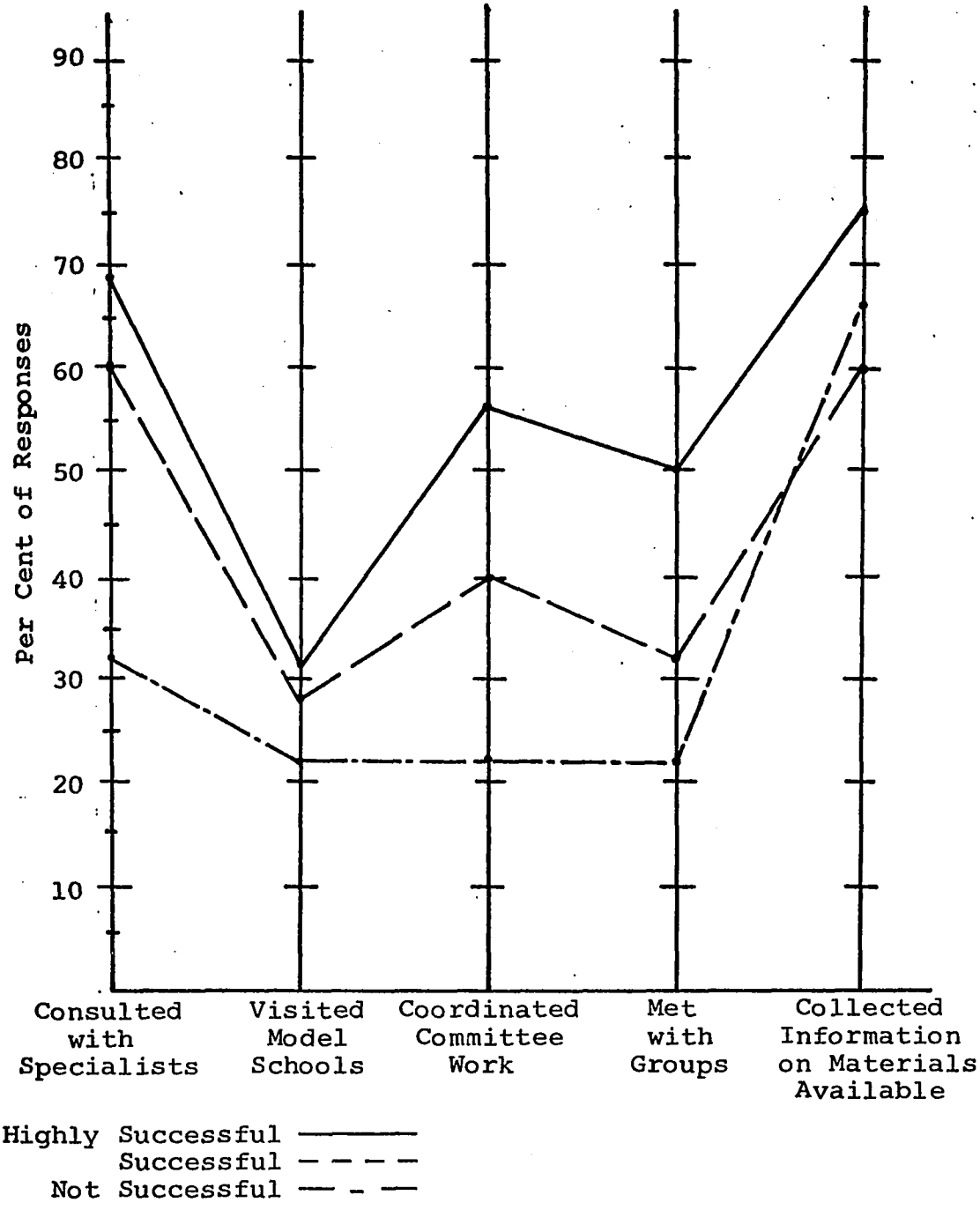

Figure 8. Curricular--What did the Person Responsible for Planning a Study of the Innovation Do? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

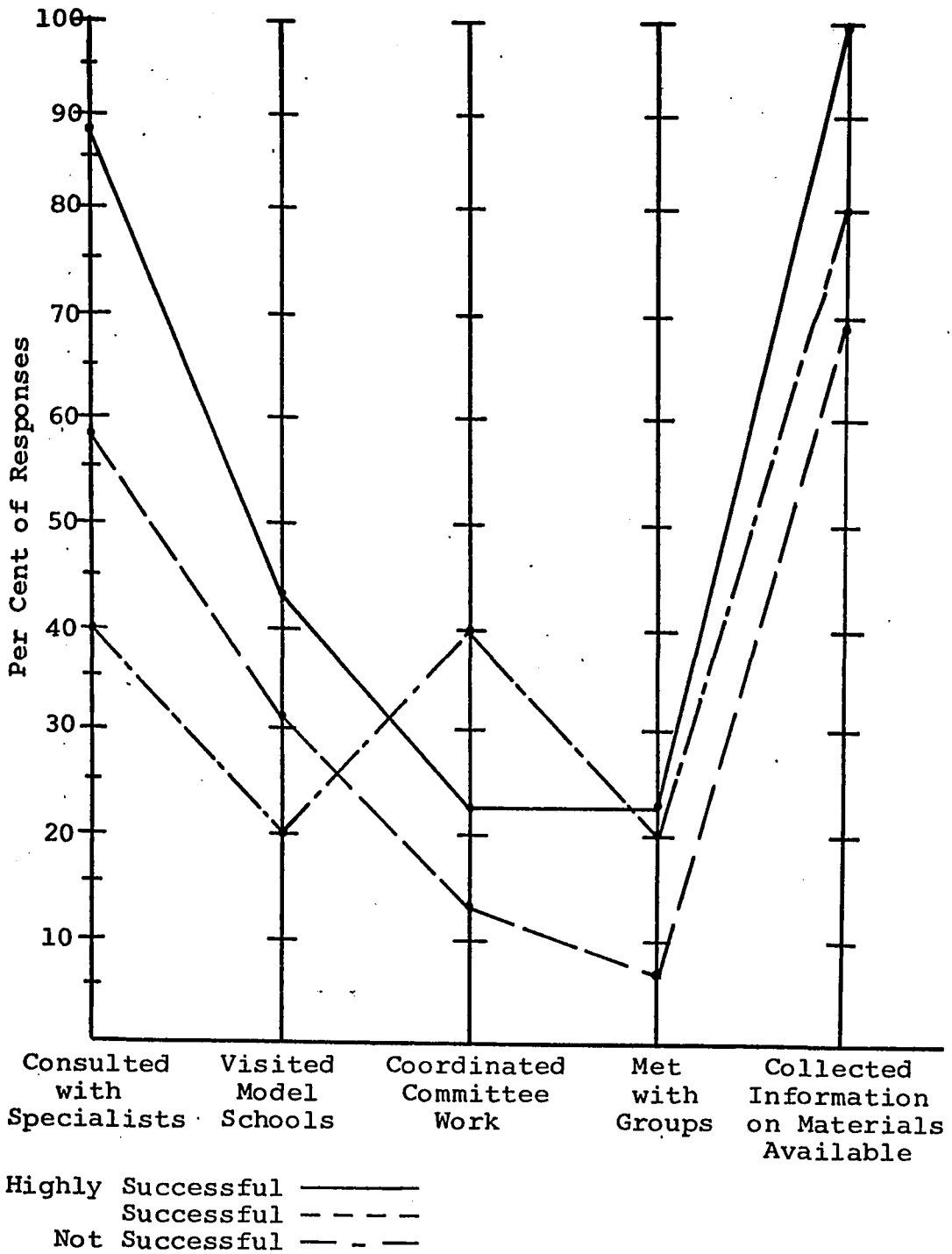

Figure 9. Technological--What did the Person Responsible for Planning a Study of the Innovation Do? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

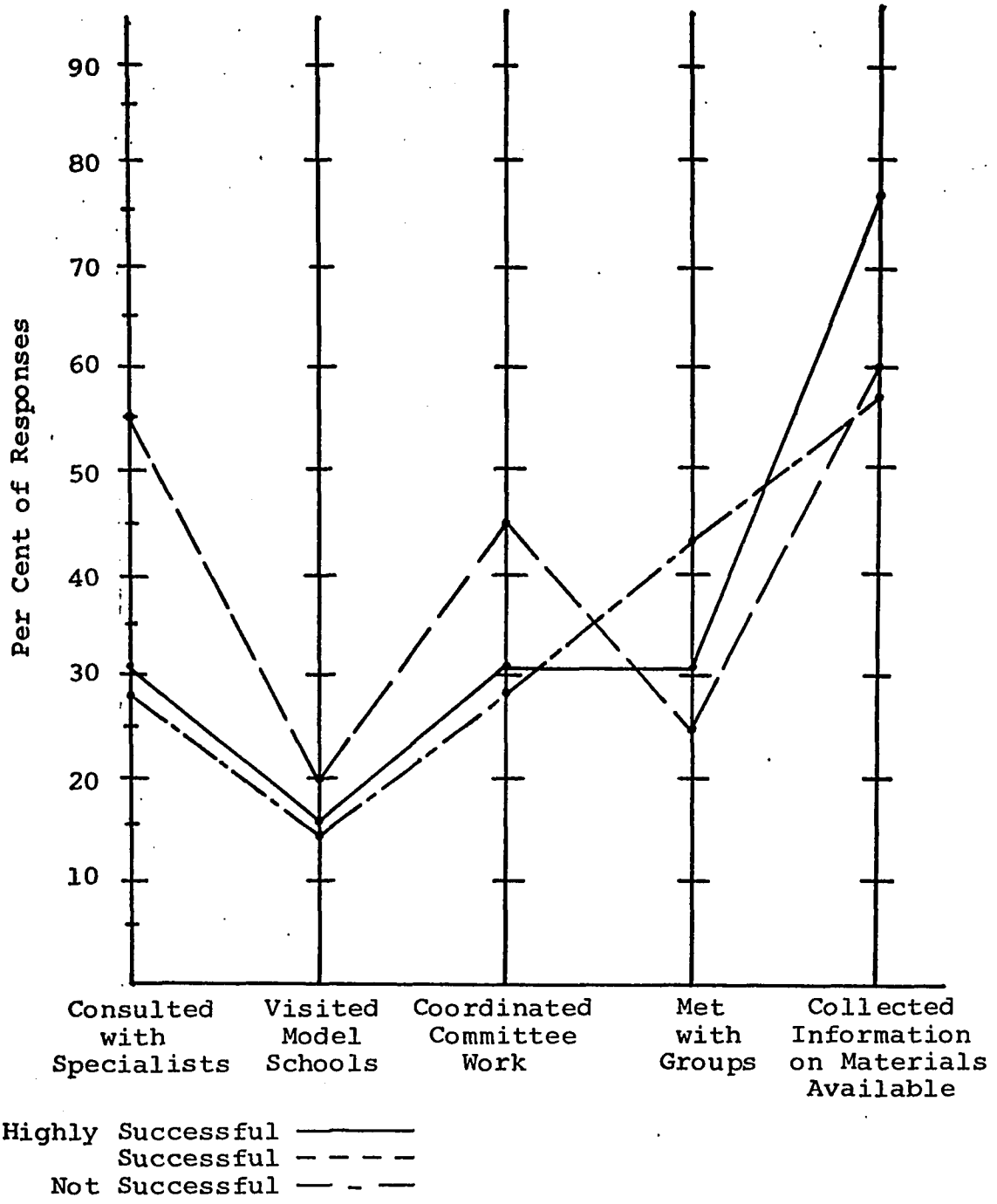

Figure 10. Organizational--What did the Person Responsible for Planning a Study of the Innovation Do? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

The innovations rated highly successful in the curricular category were reported as utilizing all five variables to a greater extent than those rated successful and not successful. This is also true in the category of technological innovations, with the exception of the one variable "coordinated committee work."

Teaching Staff Involvement

Responses to the question "What per cent of the teaching staff was involved in the initial planning and implementation of the innovation?" (Figures 11, 12, and 13) point out that of those innovations rated highly successful in the curricular category more than ten per cent reported no teacher involvement. Slightly more than forty per cent of the responses indicate that from ten to fifty per cent of the teaching staff had been involved. Approximately ten per cent reported that more than fifty per cent of the staff had been involved. Nearly eighty per cent indicated that less than ten per cent of the teaching staff had been involved in the initial planning and implementation of the innovation rated not successful.

In the category of technological innovations the extent to which the staff had been involved and the degree of success of the innovation reported follow a pattern similar to that of the responses in the curricular category.

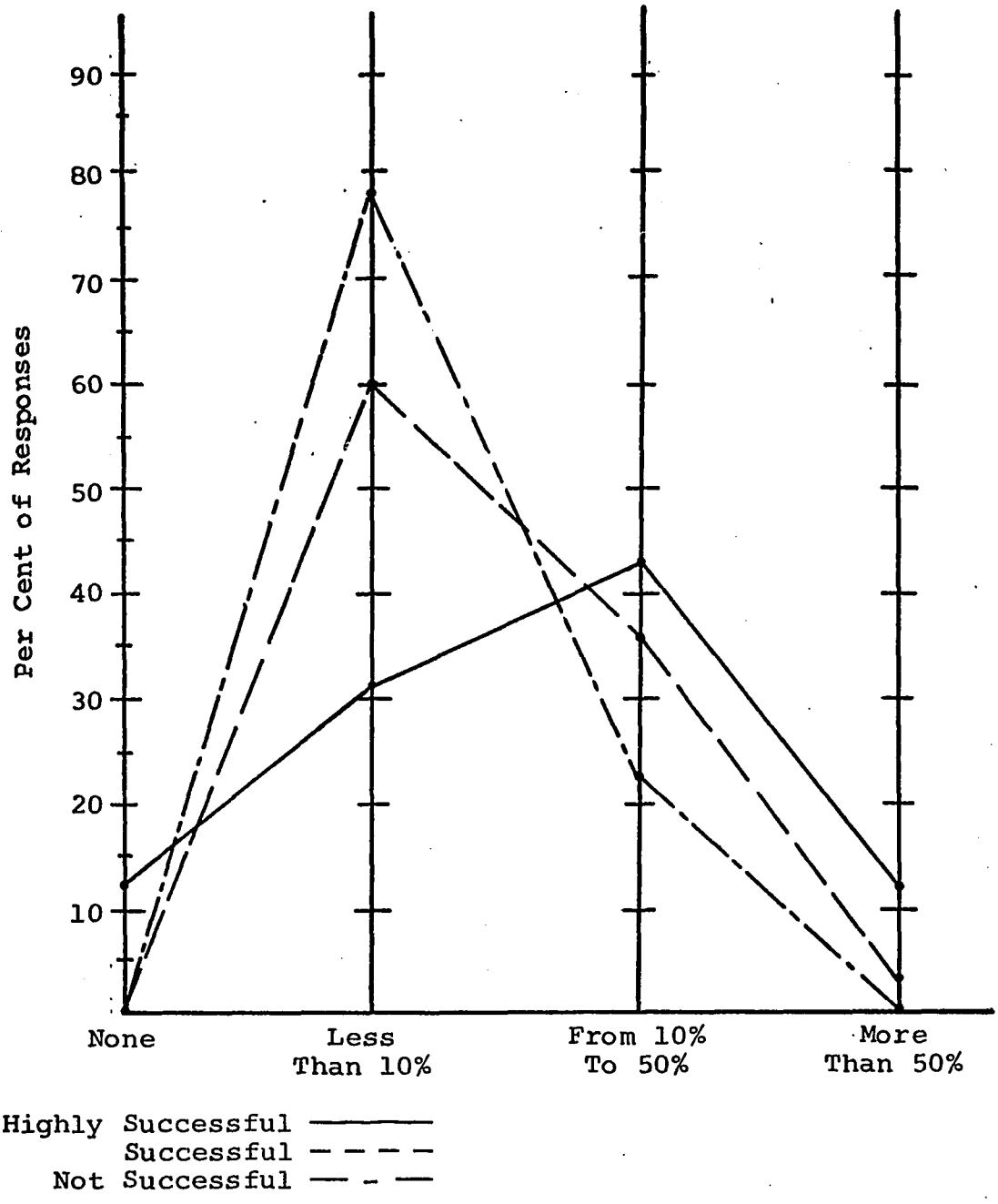

Figure 11. Curricular--What Per Cent of the Teaching Staff was Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

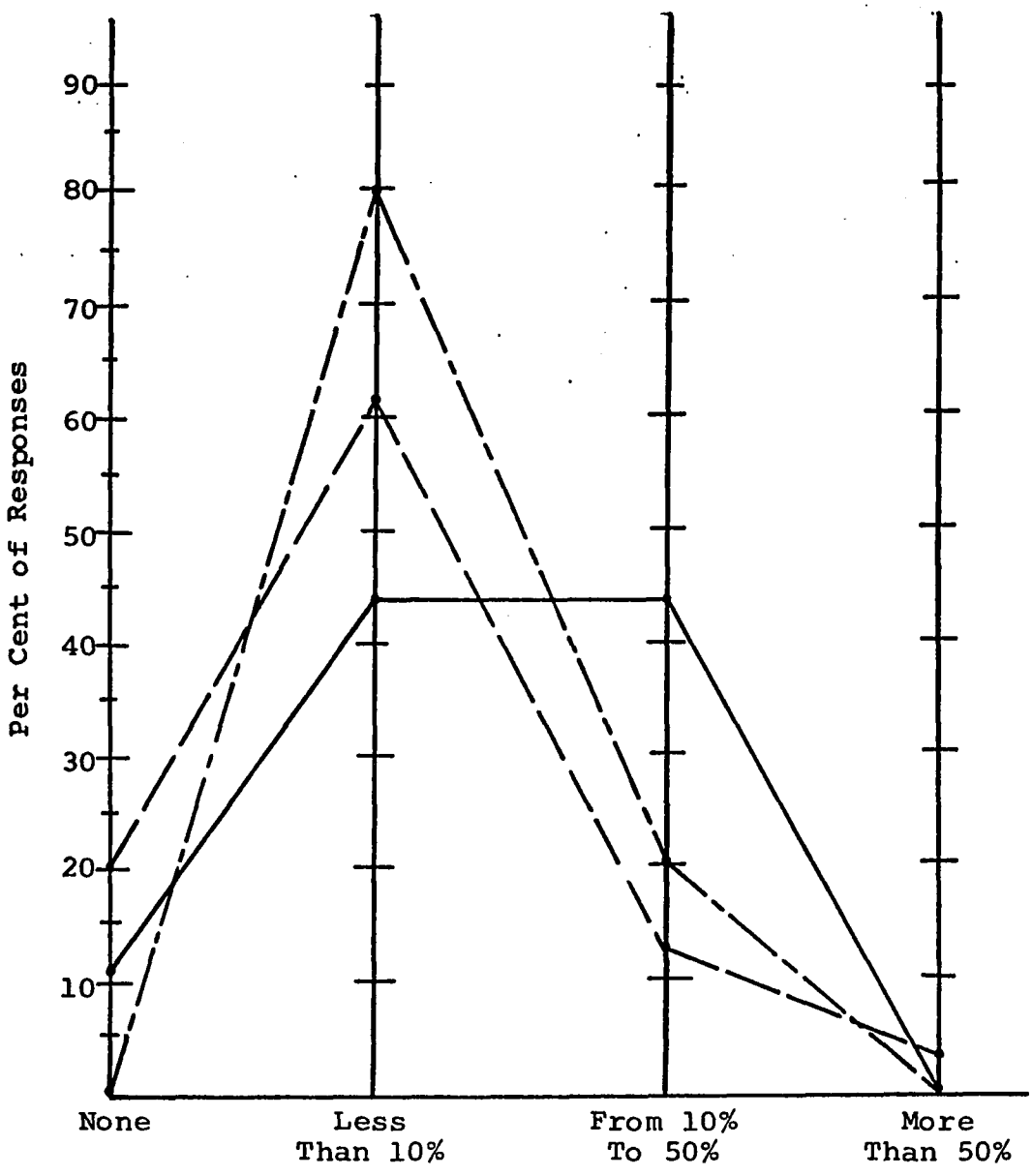

Figure 12. Technological--What Per Cent of the Teaching Staff was Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

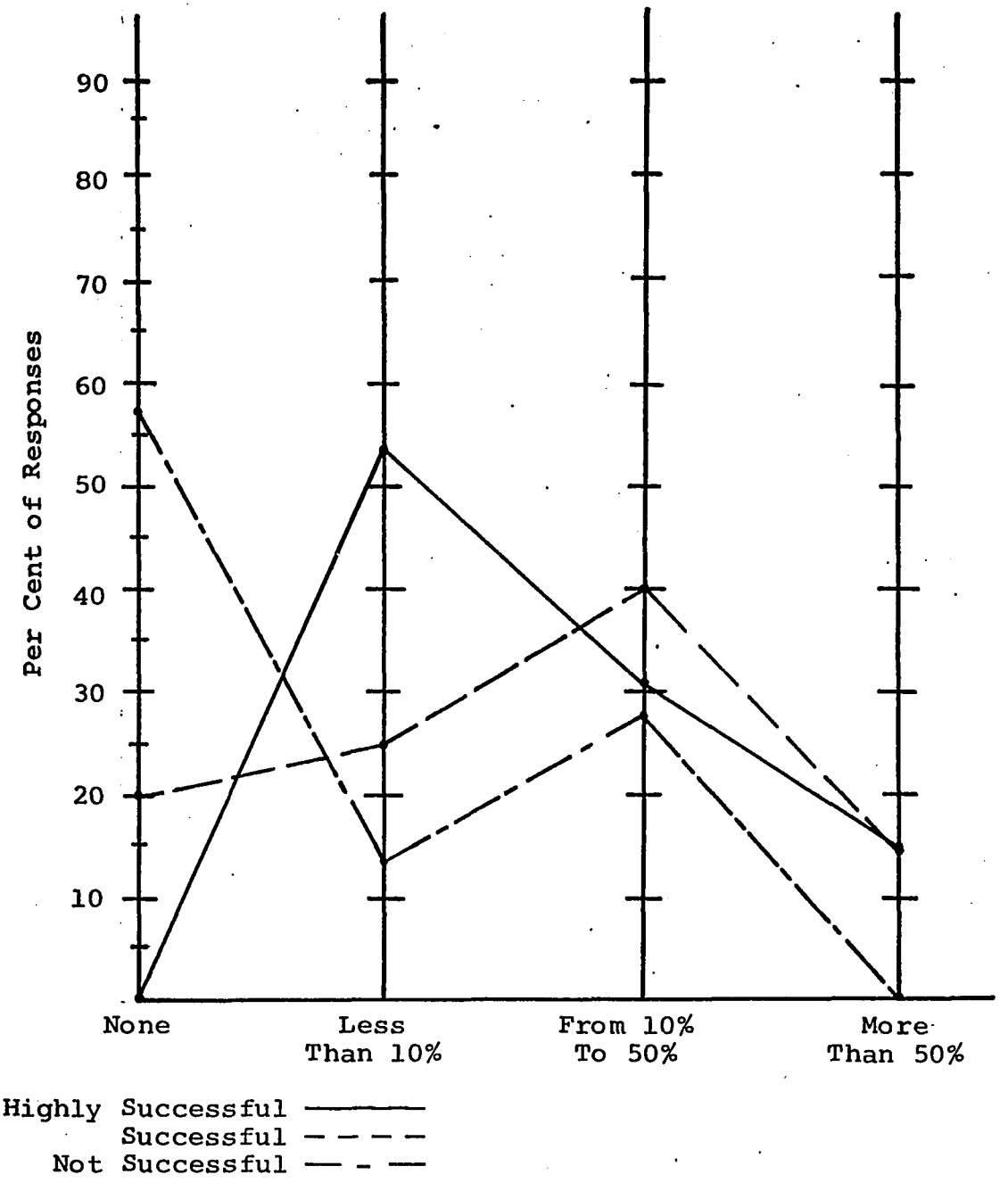

Figure 13. Organizational--What Per Cent of the Teaching Staff was Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

An interesting comparison appears in the category of organizational innovations. The variable "no teaching staff involvement in the initial planning and implementation" received the highest per cent of responses for innovations rated not successful. Innovations rated highly successful received no responses to this variable.

Planning for the Innovations by Teachers

Ways in which teachers were involved in the innovative process, as it related to the degree of success of the innovation, are illustrated by responses to the question "In what ways were the initial teachers involved in the planning and implementation of the innovation?" in Figures 14, 15, and 16. Concerning the innovations rated highly successful, the greatest per cent of responses in all three categories indicated that they had utilized the variable "involved in work outside of school day." Likewise, the highest per cent of responses concerning innovations rated not successful indicated that they too had utilized the variable "involved in work outside of the school day."

In the category of curricular innovations the per cent of responses for all three success ratings is similar. However, in the technological category, the relationship between the per cent of responses and the degree of success of innovations is similar only where teachers had "visited

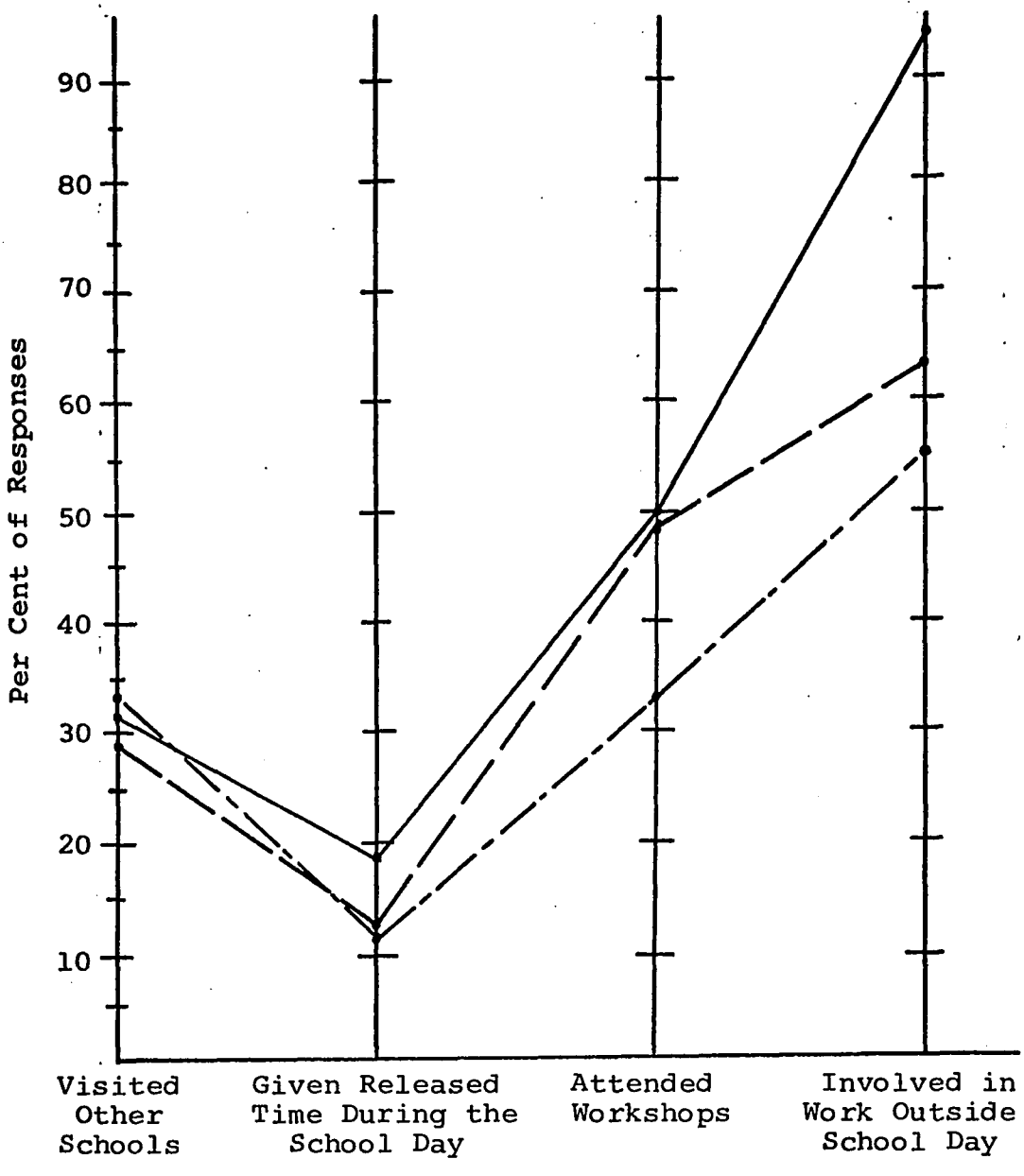

Figure 14. Curricular--In What Ways were the Initial Teachers Involved in the Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

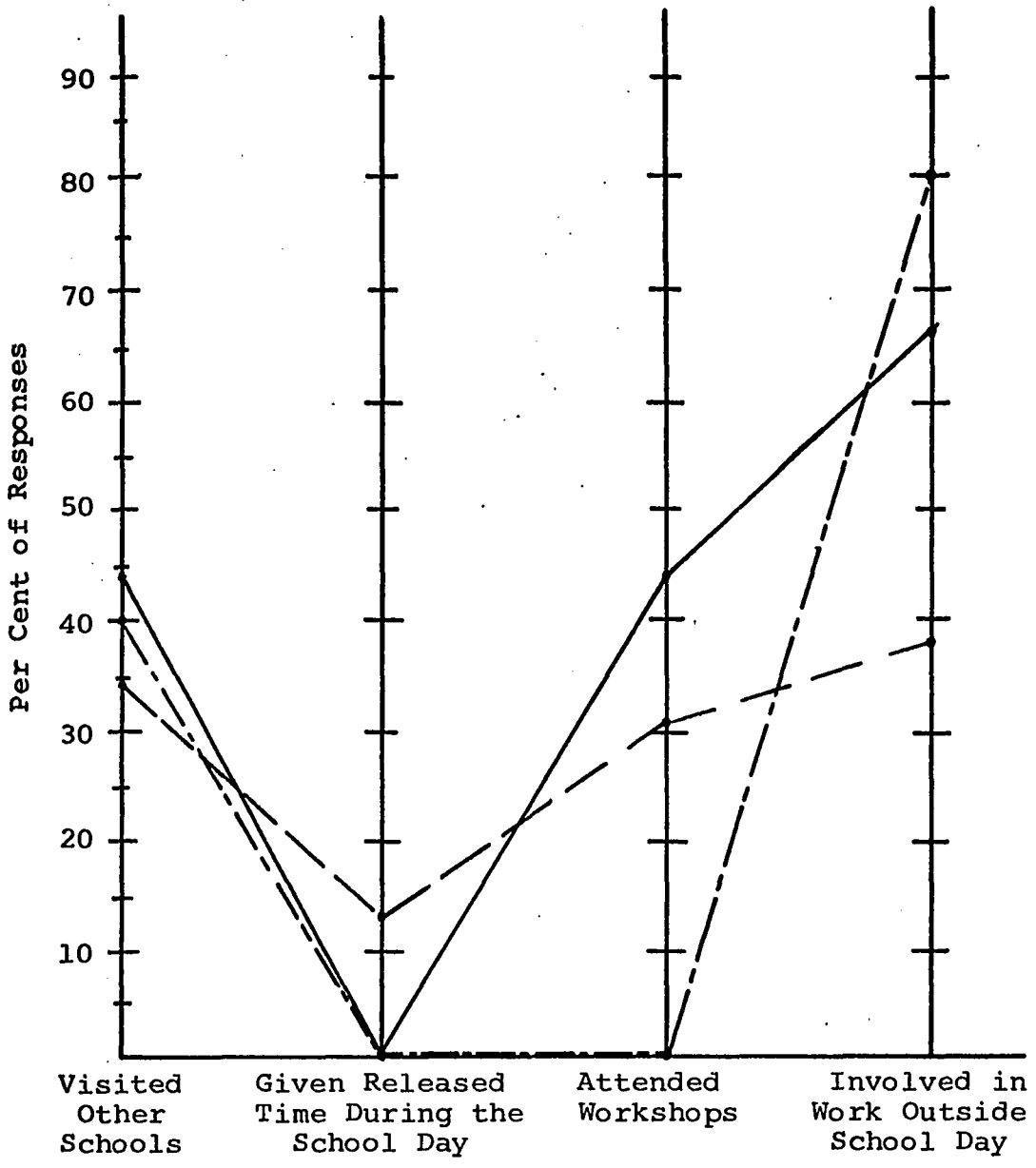

Figure 15. Technological--In What Ways were the Initial Teachers Involved in the Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

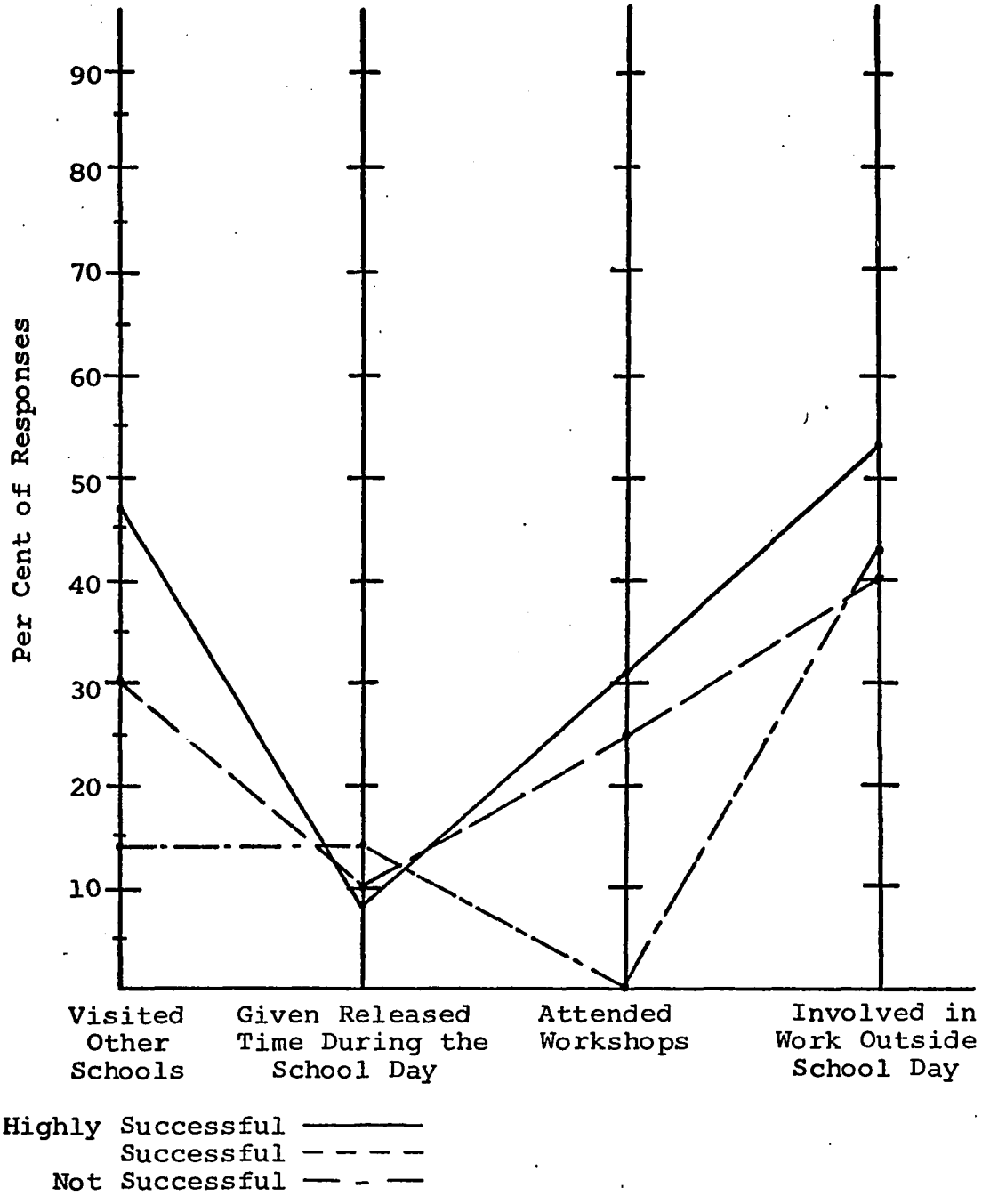

Figure 16. Organizational--In What Ways were the Initial Teachers Involved in the Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

other schools" in the planning and implementation phase and had been "given released time during the school day."

Of the innovations reported highly successful in the technological category, forty-five per cent of the responses indicate that teachers had utilized the variable "attended workshops" during the planning and implementation phase. None of the responses concerning not successful innovations indicate that teachers had utilized the variable "attended workshops."

It should be noted that in the organizational category, approximately forty-five per cent of the responses concerning innovations rated highly successful indicate that teachers had visited other schools. This appears to be in contrast to data presented in Figure 10, where less than twenty per cent of the responses concerning innovations rated highly successful indicates that the person responsible for planning a study of the innovation visited model schools.

Student Involvement

The responses to the question "What per cent of the student body was involved in the initial planning and implementation of the innovation?" (Figures 17, 18, and 19) indicate that all innovations in the curricular and technological categories had involved less than fifty per cent of the student body in the initial planning and implementation, regardless of the degree of success of the innovation.

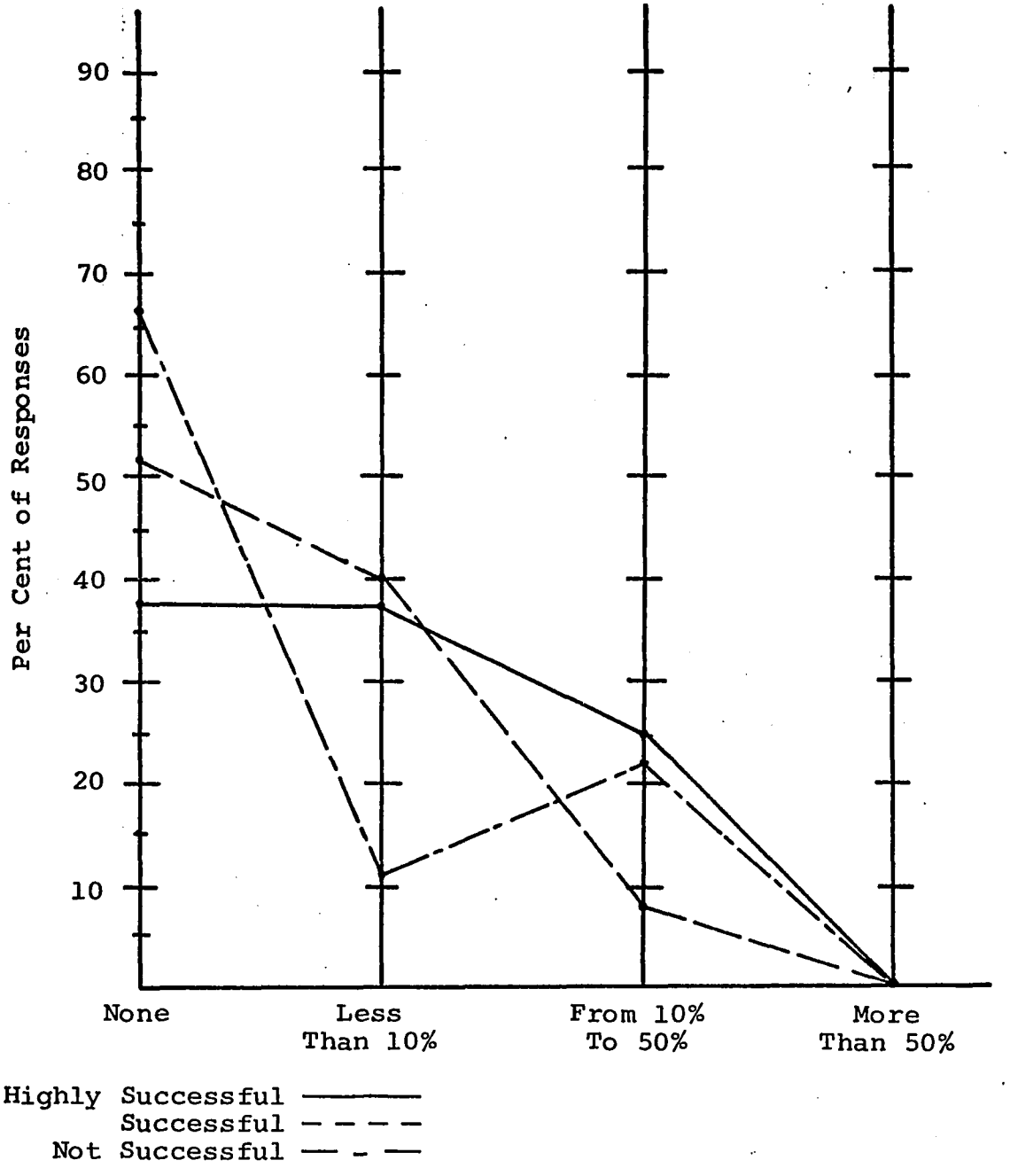

Figure 17. Curricular--What Per Cent of the Student Body was Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

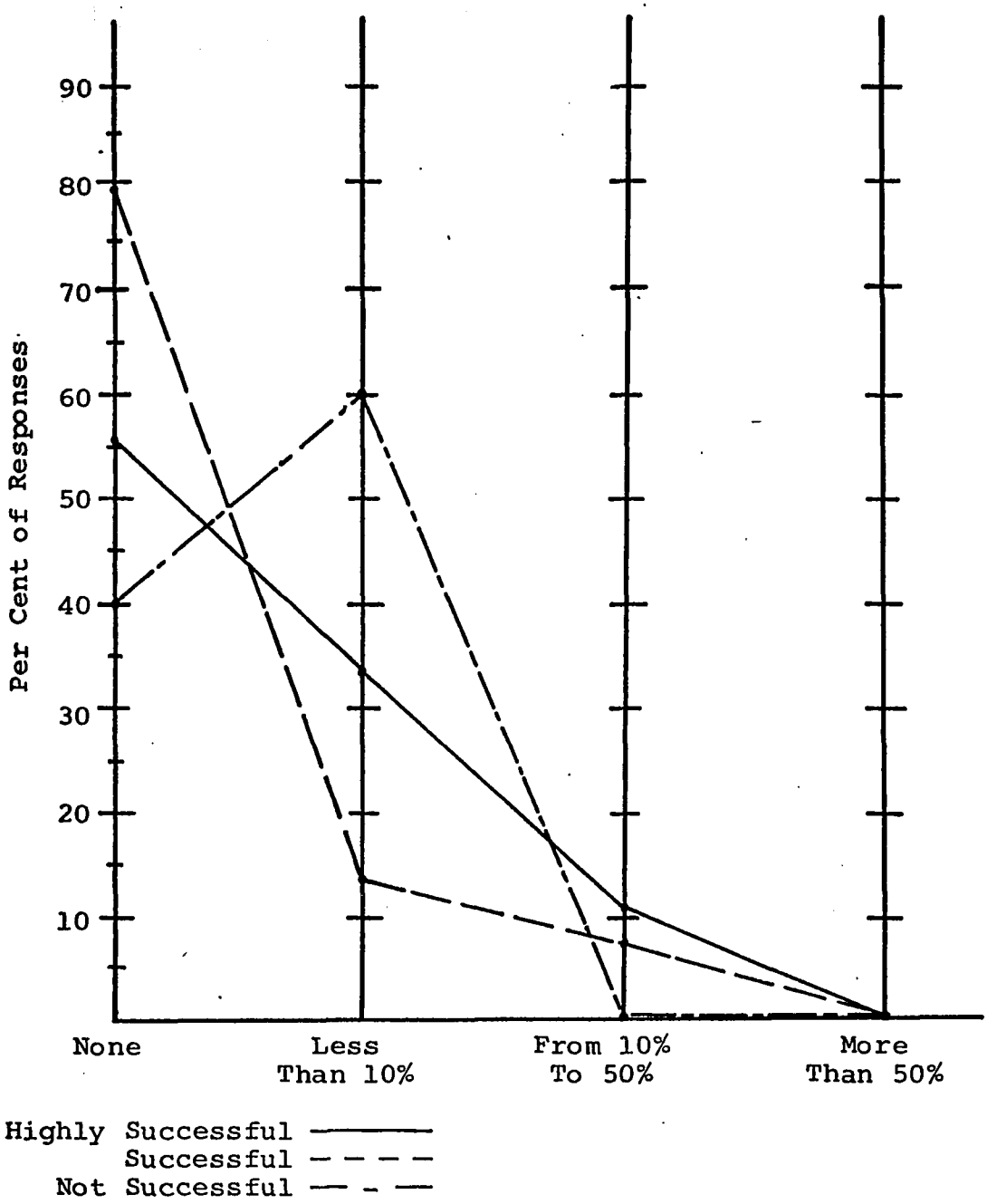

Figure 18. Technological--What Per Cent of the Student Body Was Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

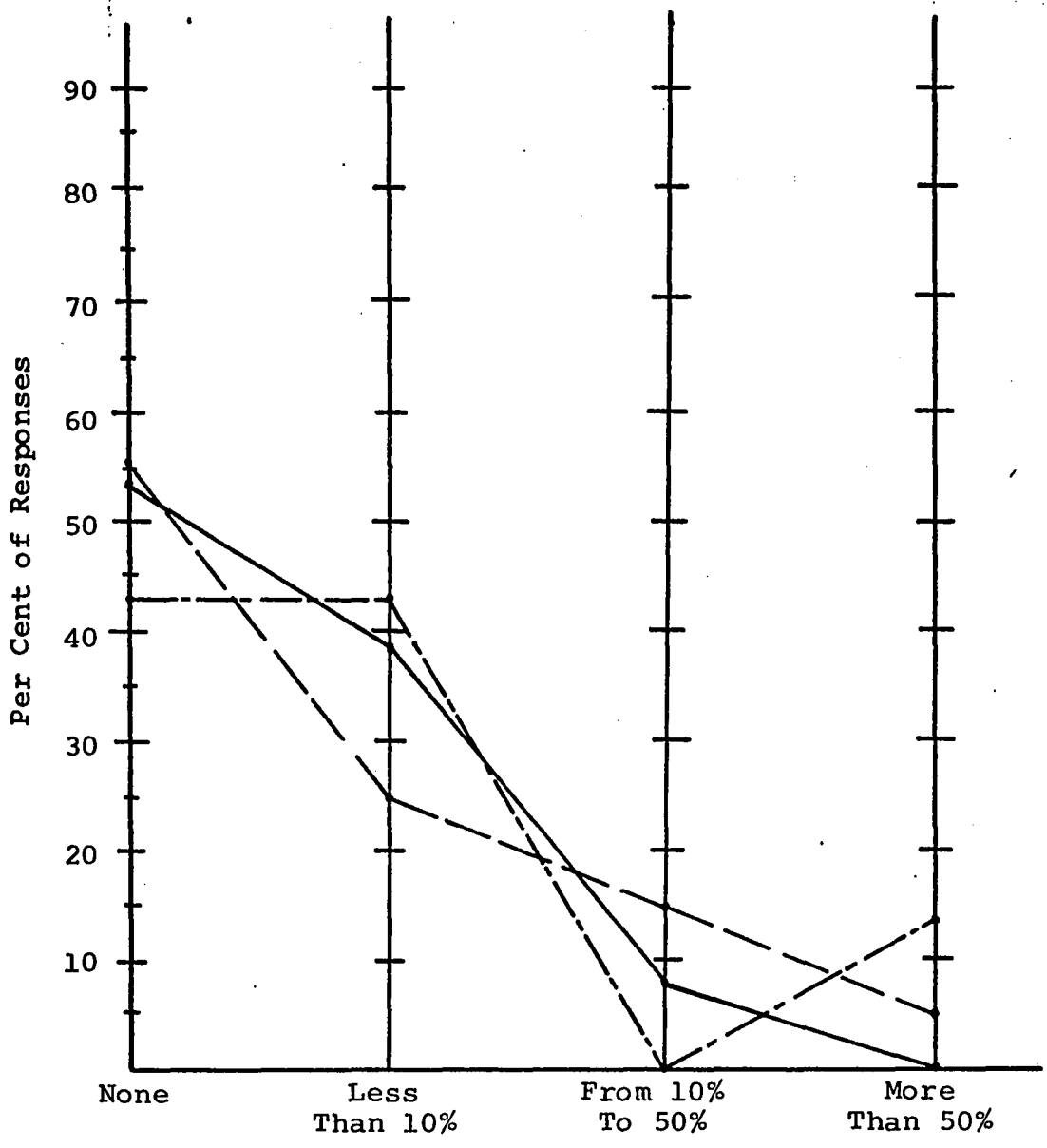

Figure 19. Organizational--What Per Cent of the Student Body was Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

In the organizational category five per cent of the responses concerning innovations rated successful and fifteen per cent of the responses concerning innovations rated not successful indicate that more than fifty per cent of the student body was involved in the initial planning and implementation. None of the responses concerning innovations rated highly successful indicate that more than fifty per cent of the student body had been involved.

A high per cent of the responses concerning all three success ratings in each of the categories, curricular, technological, and organizational indicates that none or "less than ten per cent" of the student body had been involved in the initial planning and implementation of the innovation.

Planning for the Innovation by the Students

The responses to the question "In what ways were the students involved in the initial planning and implementation of the innovation?" (Figures 20, 21, and 22) indicate that in all three categories of innovations students were involved most frequently through the opportunity to express their views in open meetings. In comparing the responses concerning innovations rated not successful in technological and organizational categories a similar per cent of responses indicates student involvement through open meetings.

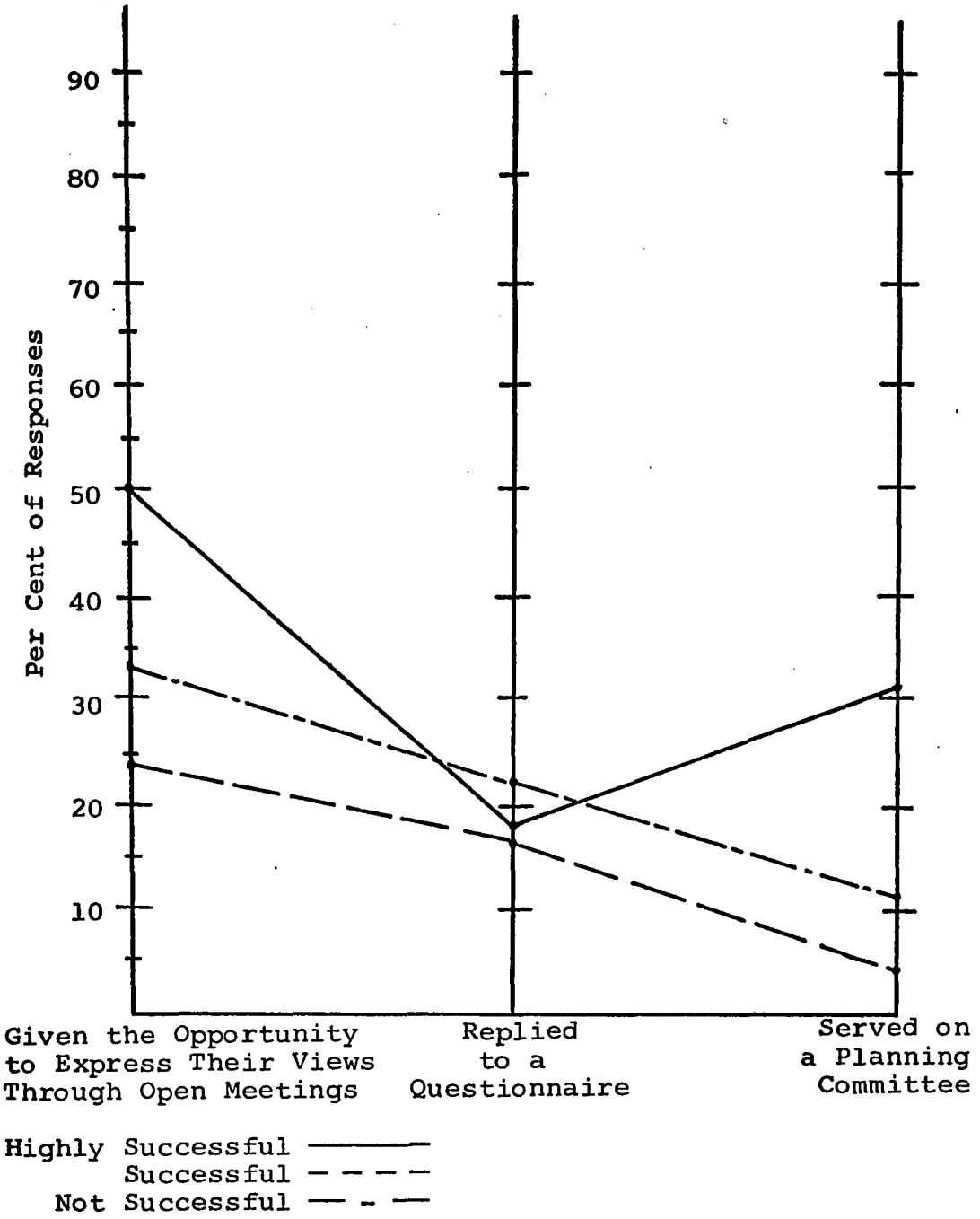

Figure 20. Curricular--In What Way were the Students Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

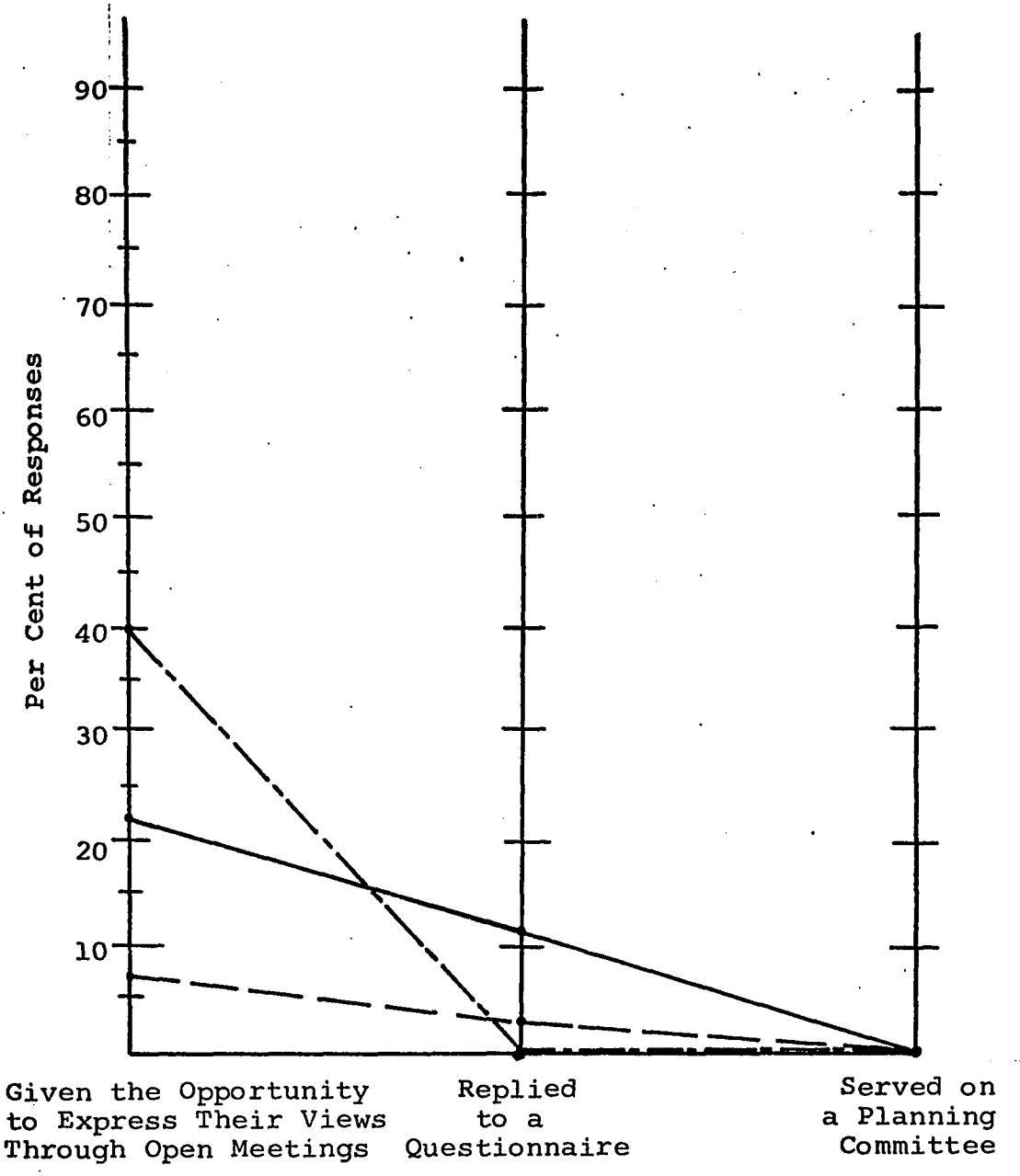

Figure 21. Technological--In What Way were the Students Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

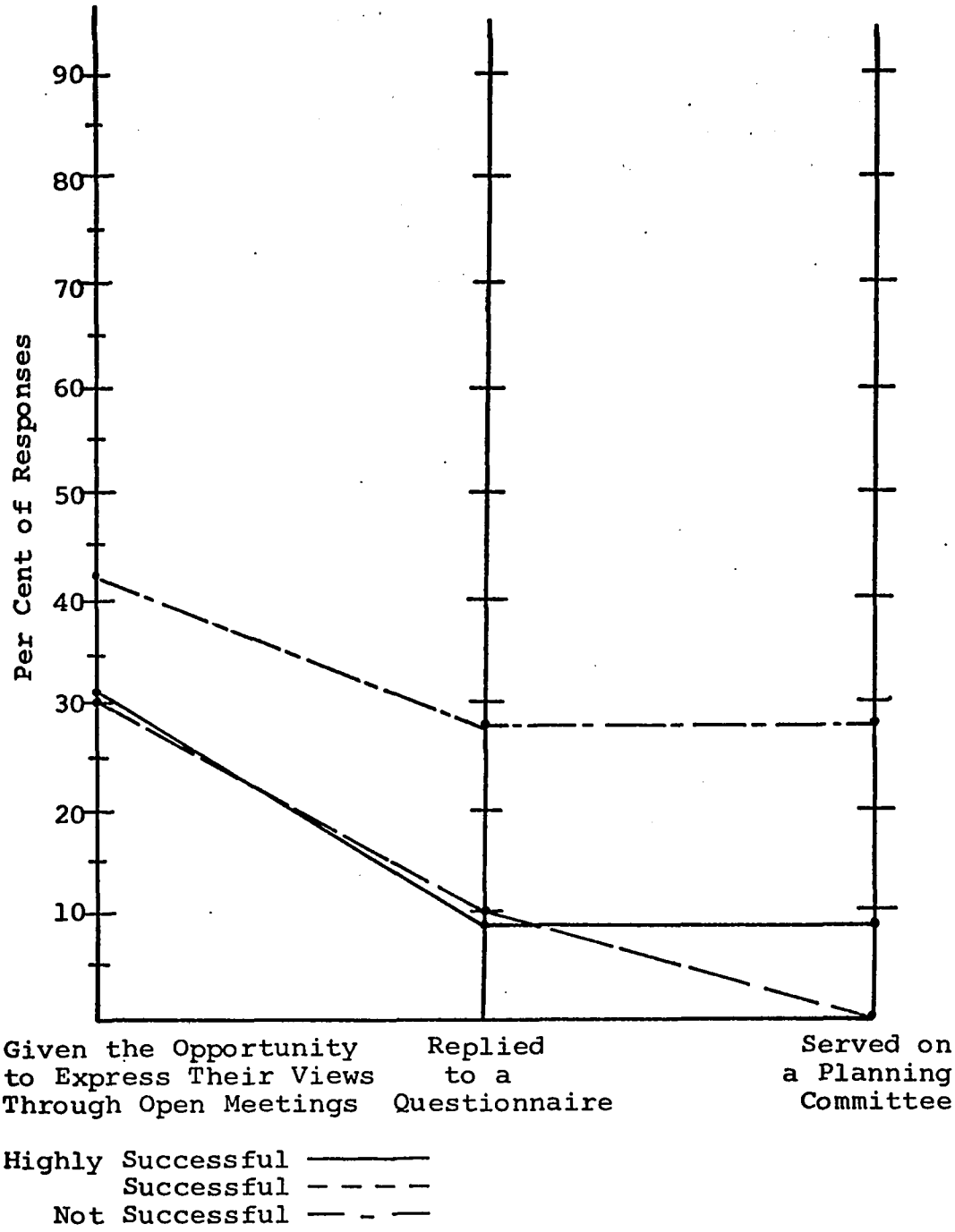

Figure 22. Organizational--In What Way were the Students Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

Likewise, in both categories the responses indicate no involvement of students by means of a questionnaire.

Community Involvement

The responses to the question "Was the community involved in the initial planning and implementation of the innovation?" (Figures 23, 24, and 25) indicate that the extent of the community involvement varied with each of the three categories. In the curricular category the per cent of responses concerning innovations rated highly successful and successful indicates that these innovations have the greatest amount of community involvement, with no involvement indicative of those rated not successful. Similar responses are noted in the organizational category although here some community involvement is indicated for each success rating.

In contrast to the responses in the curricular and organizational categories, a substantially greater per cent of responses in the technological category indicates community involvement in planning and implementing innovations rated not successful than in the other two success ratings.

Planning for the Innovation by the Community

Figures 26, 27, and 28 illustrate the responses to the question "In what ways were members of the community involved in the initial planning and implementation of the

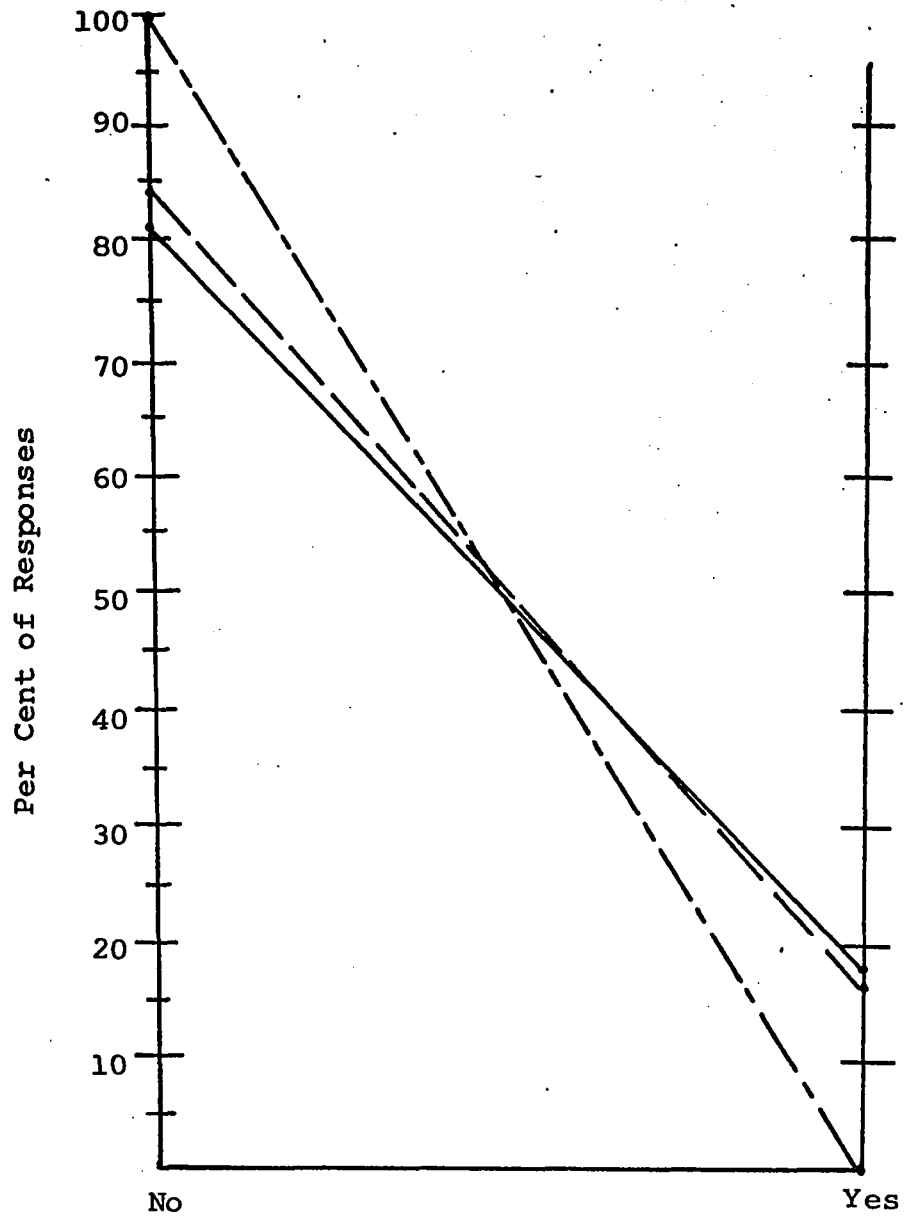

Figure 23. Curricular--Was the Community Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

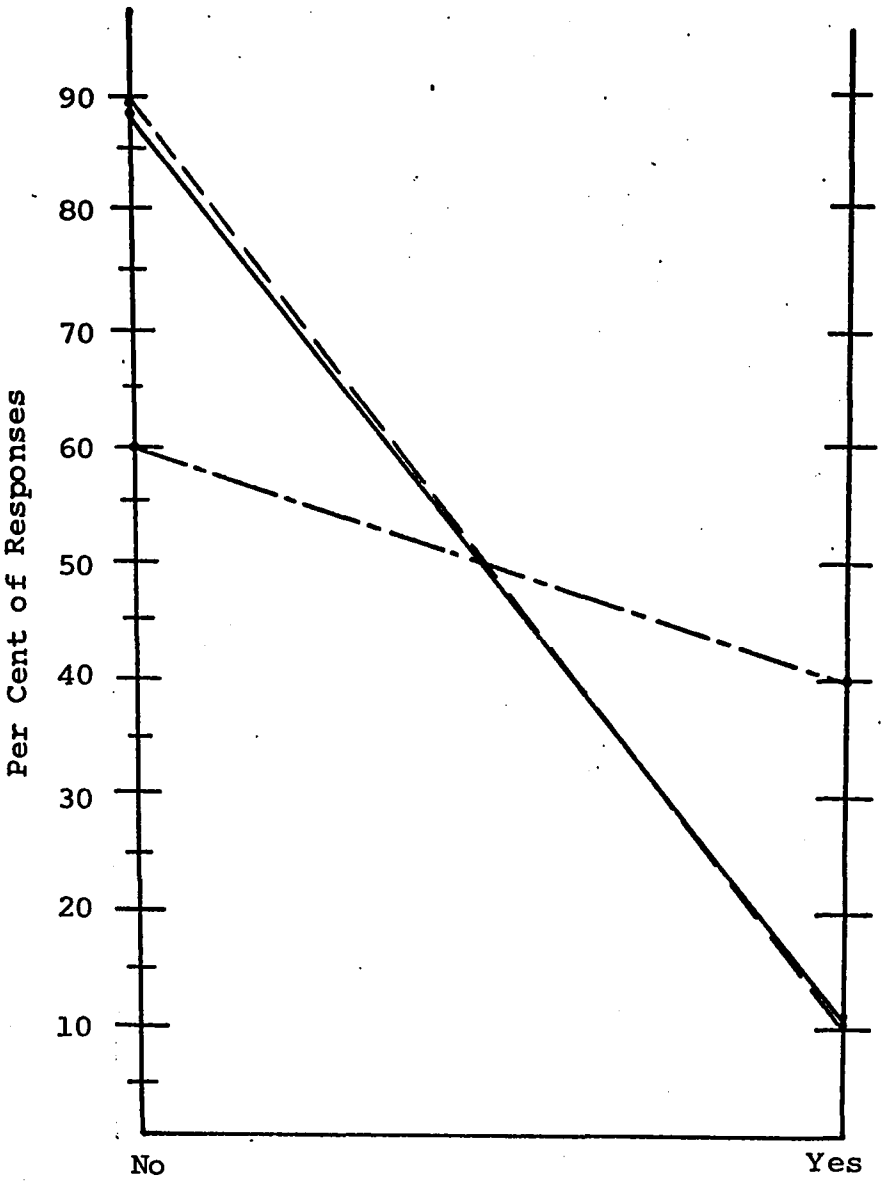

Figure 24. Technological--Was the Community Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

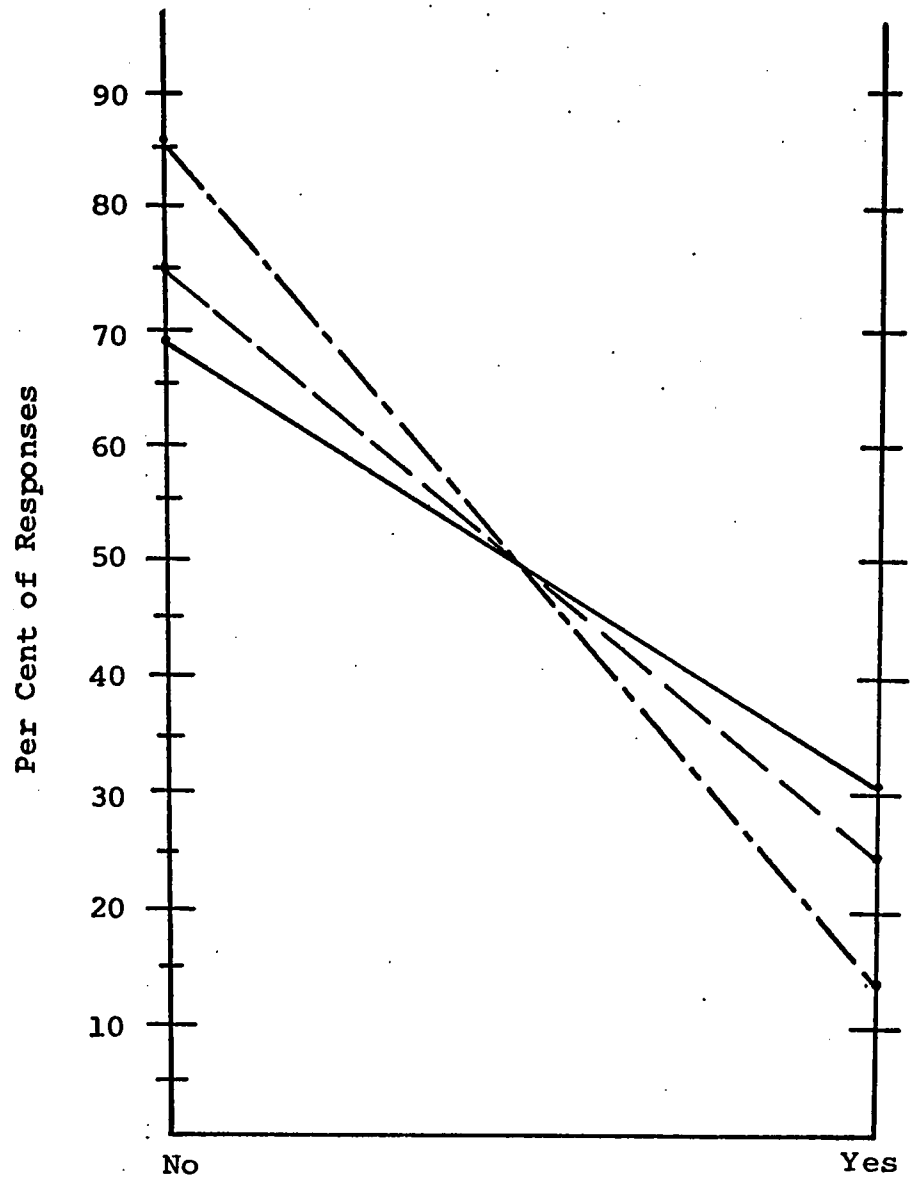

Figure 25. Organizational--Was the Community Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

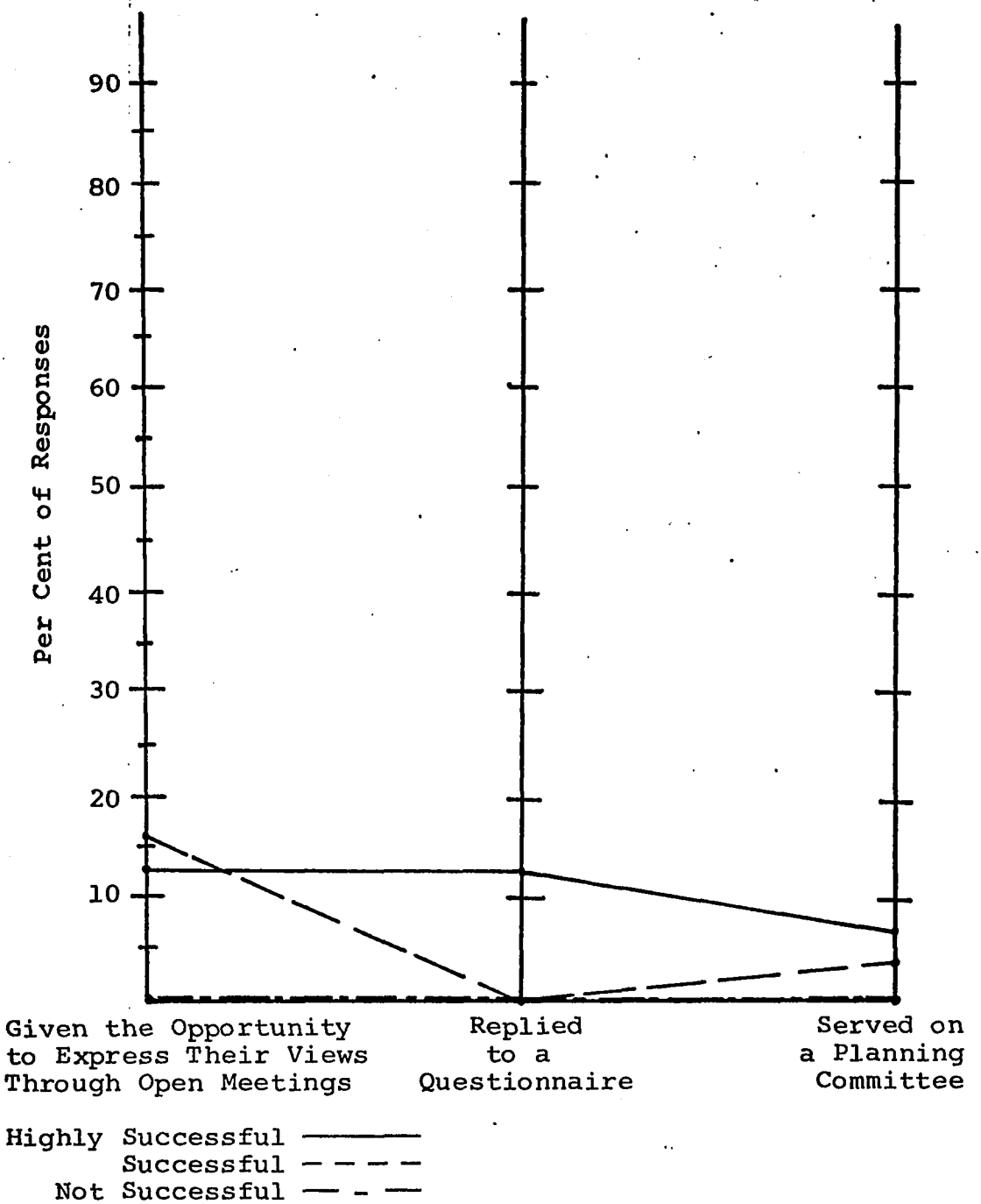

Figure 26. Curricular--In What Way were Members of the Community Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

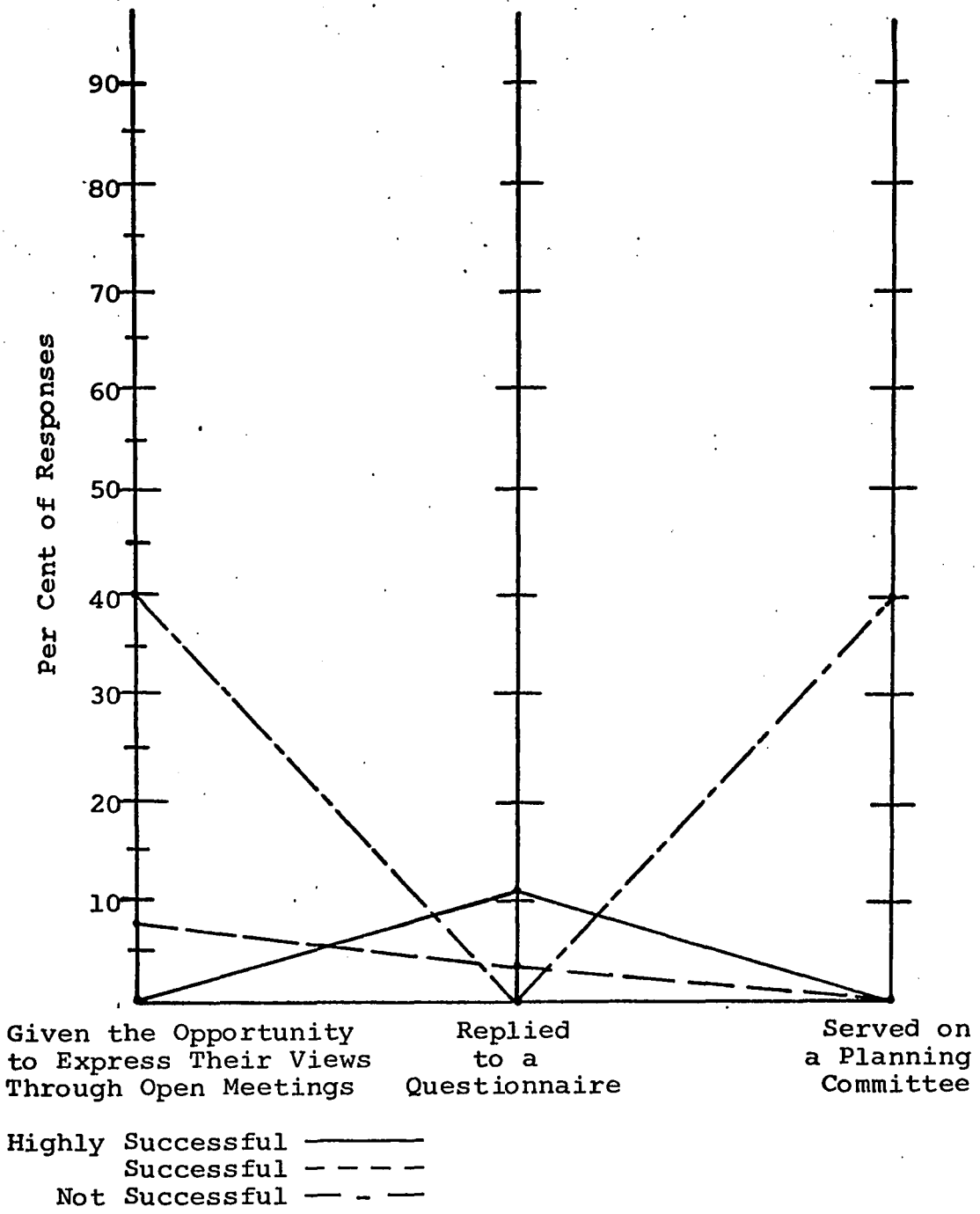

Figure 27. Technological--In What Way were Members of the Community Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

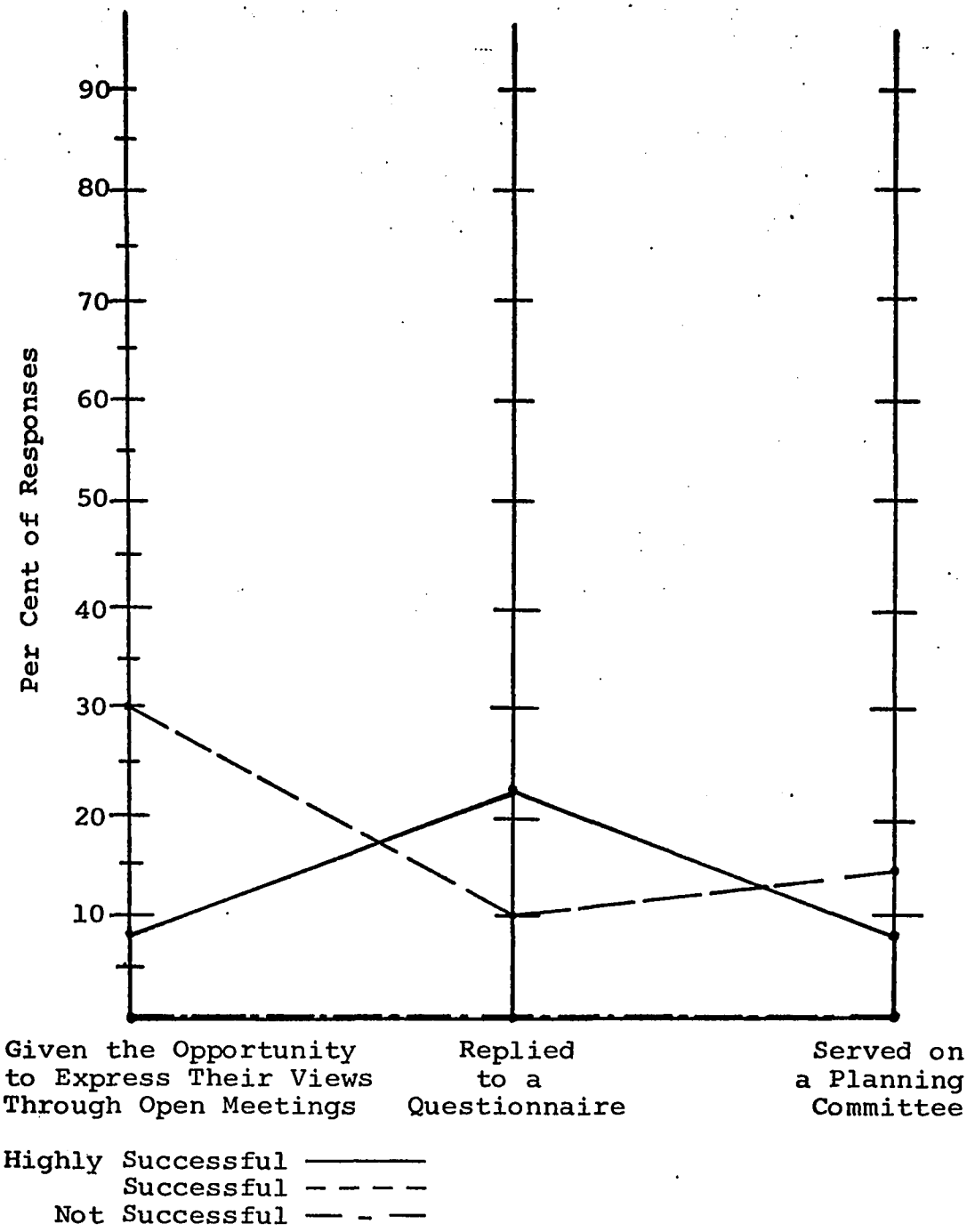

Figure 28. Organizational--In What Way were Members of the Community Involved in the Initial Planning and Implementation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

innovation?" This question had also been asked concerning student involvement (see Figures 20, 21, and 22). Generally the per cent of responses indicates more student involvement than community involvement. The highest per cent of responses concerning innovations rated highly successful in all three categories indicates that the community had been involved in the initial planning and implementation of the innovation through the use of questionnaires.

In the curricular and organizational categories the responses concerning innovations rated not successful indicate that no community involvement through utilization of the three variables had taken place. On the other hand in the technological category responses concerning innovations rated not successful indicate that the community was not involved through the use of a questionnaire, but that substantial community involvement had taken place through open meetings and service on a planning committee.

Superintendent's Support

Responses to the question "In what way did the district superintendent support this innovation?" are presented in Figures 29, 30, and 31. Regardless of the degree of success, the variable "expressed interest in innovation to the staff" was utilized most frequently and the variable "gave press releases in support of the innovation" least frequently in each of the three categories.

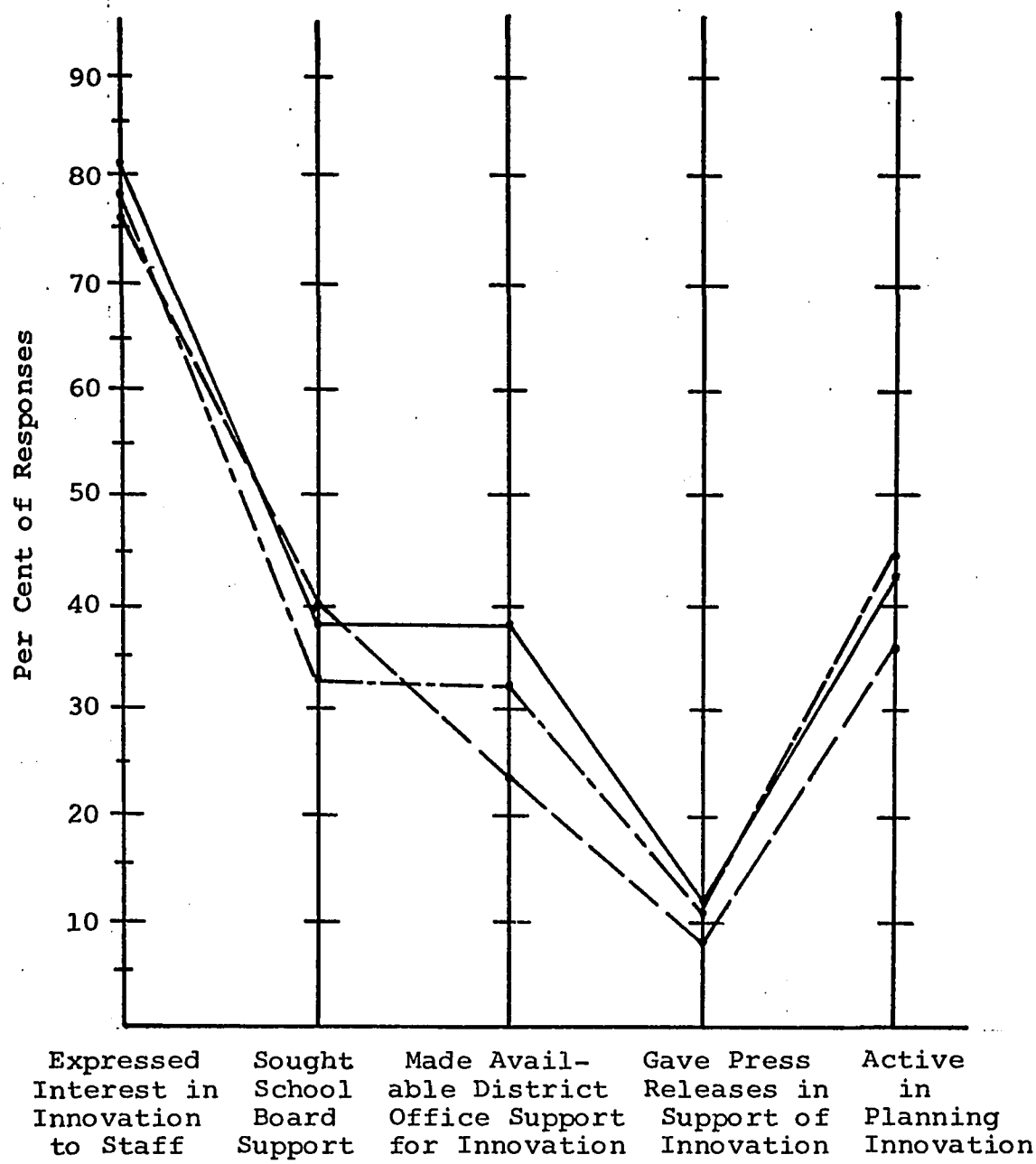

Figure 29. Curricular--In What Way did the District Superintendent Support this Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

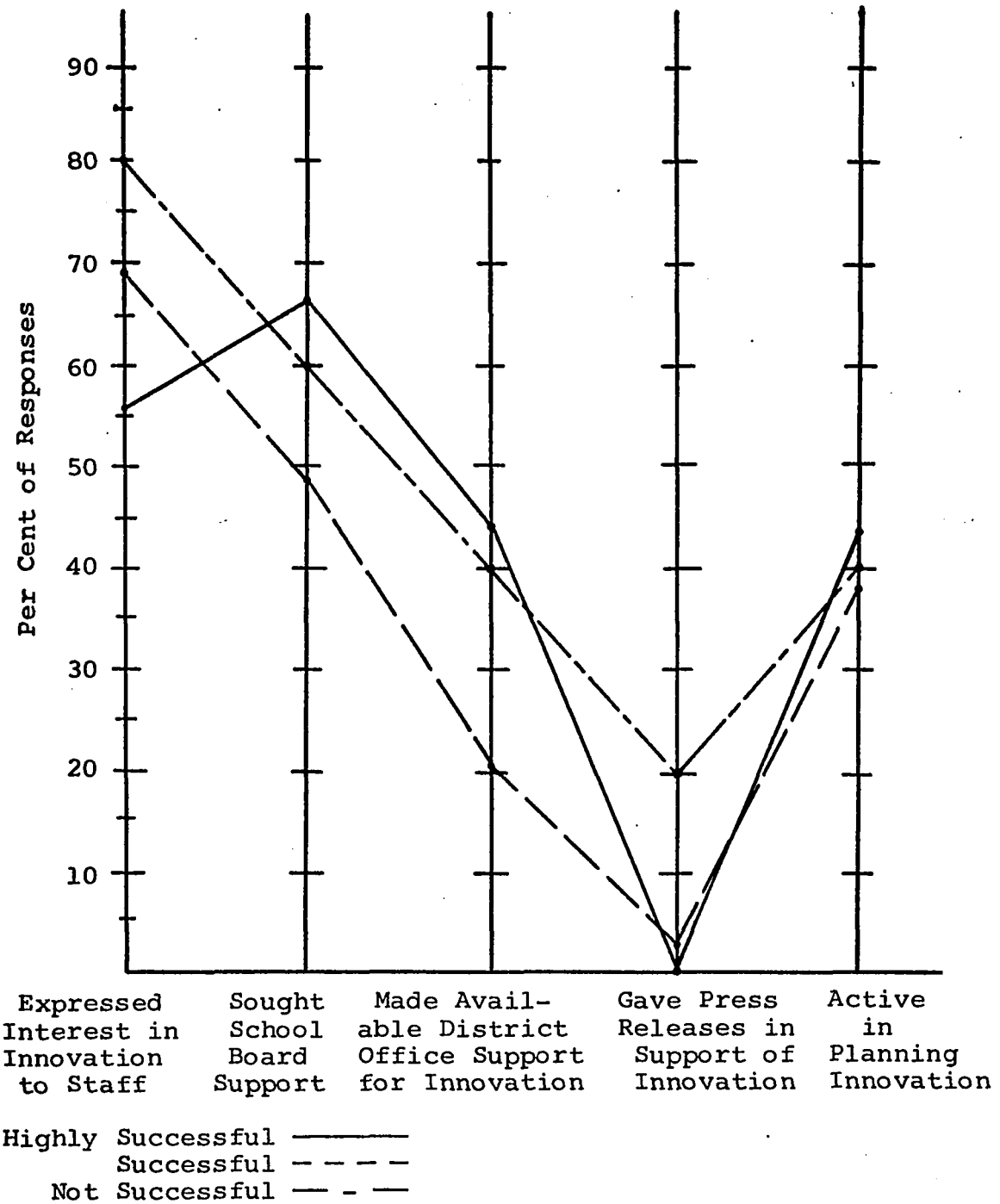

Figure 30. Technological--In What Way did the District Superintendent Support this Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

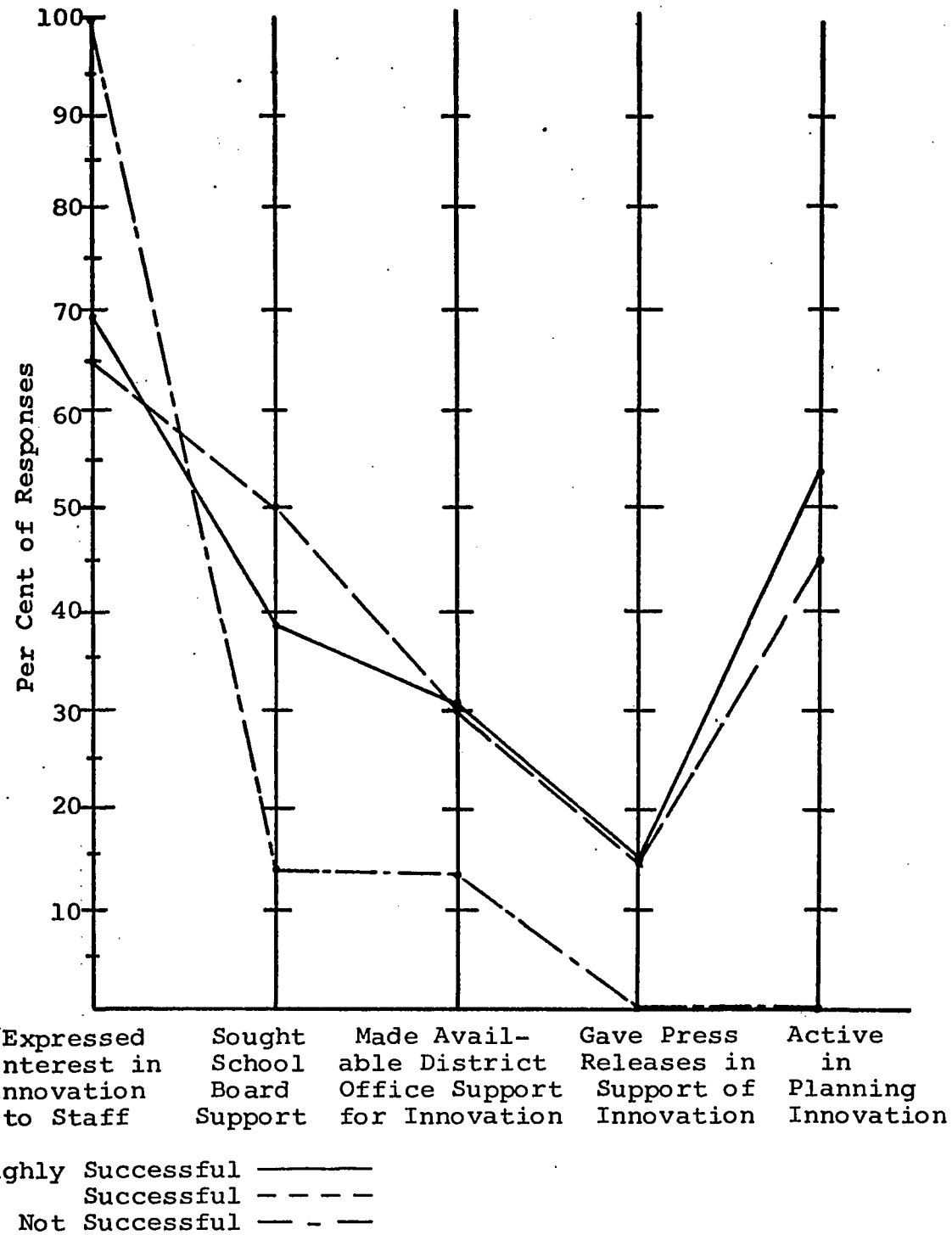

Figure 31. Organizational--In What Way did the District Superintendent Support this Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

The relationship between the degree of success of the innovations and the per cent of response for each variable is quite similar in all three categories.

Financial Support

Ways and means of providing financial support were reported in response to the question "How was financial support provided?" (Figures 32, 33, and 34). In the curricular and organizational categories the per cent of response to the variable "none needed or asked for" is the greatest. Innovations rated highly successful in the technological category utilize the variable "district appropriated funds" to the greatest frequency. Highly successful rated innovations in all three categories appear to have been financed by district and federal funds. In the curricular and technological categories it appears that no state funds were used to finance innovations rated highly successful.

Of the innovations rated not successful the variable "none needed or asked for" received the highest per cent of responses in the organizational category. The per cent of responses indicating some utilization of funds for innovations rated not successful is lower than that of the other two success ratings, with the exception of the curricula category where state funds had been used in a few innovations.

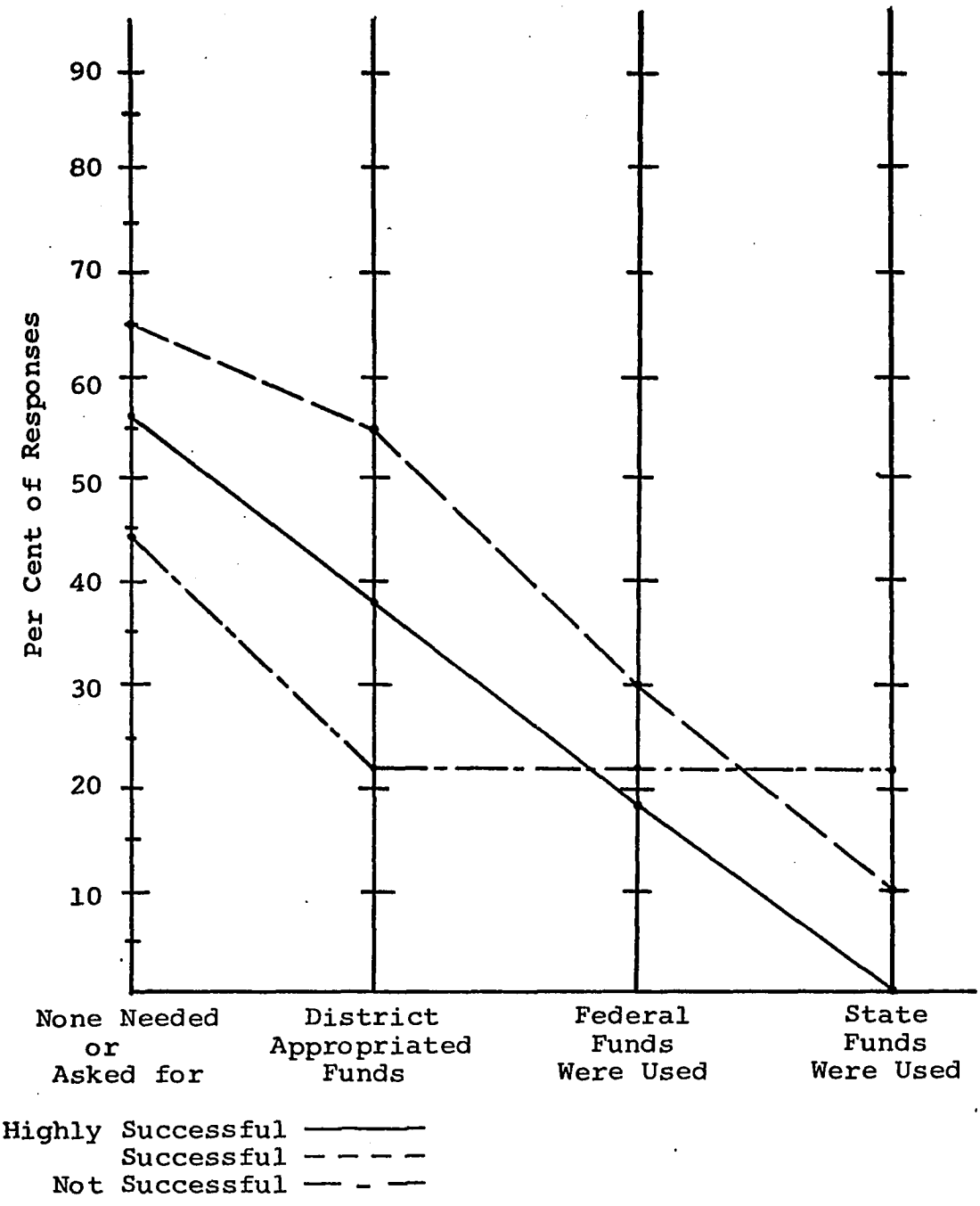

Figure 32. Curricular--How was Financial Support Provided? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

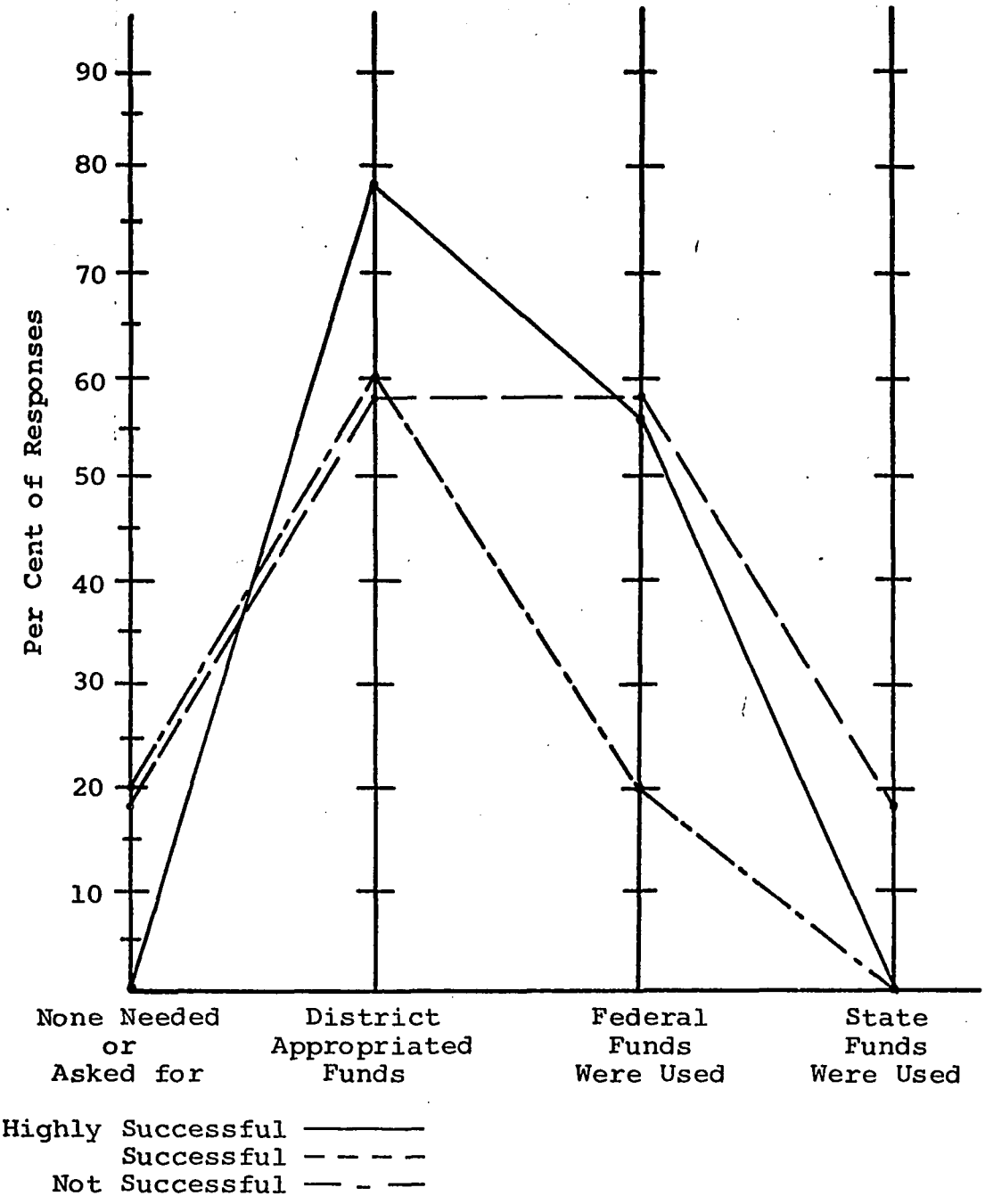

Figure 33. Technological--How was Financial Support Provided? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

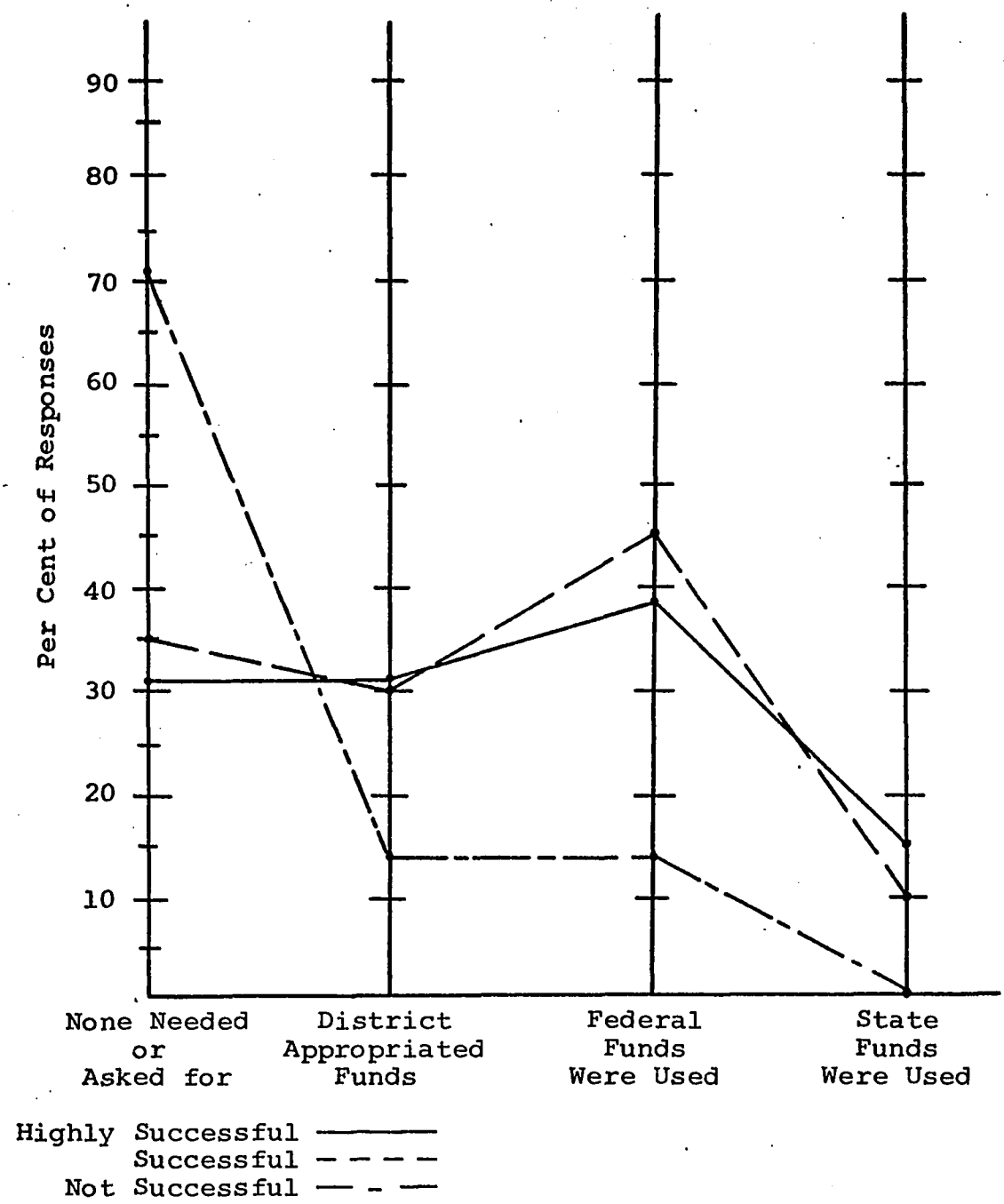

Figure 34. Organizational--How was Financial Support Provided? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

Evaluation

The response to the question "What was included in the evaluation of the innovation?" is presented in Figures 35, 36, and 37. In the curricular and technological categories the responses to each of the five variables as related to the success rating of the innovation appear to be similar. The organizational category reflects a different relationship, in that the innovations rated highly successful utilized the variable "Data collected to measure effect of innovation" and "Teacher views were recorded" to a much greater extent than the innovations rated not successful. A small per cent of responses indicated the development of new measurement instruments and the recording of the community views.

Testing of the Hypotheses

Three hypotheses related to the problem, "Is there a relationship between the success of educational innovations and the utilization of selected variables during the innovative process?" were tested. A "z" test was used to test each null hypothesis statistically.[1]

$$z = \frac{\text{Observed difference between proportions}}{\text{Estimate of the standard error of the difference between the proportions}}$$

1. George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Book Company, 1966), pp. 176-178.

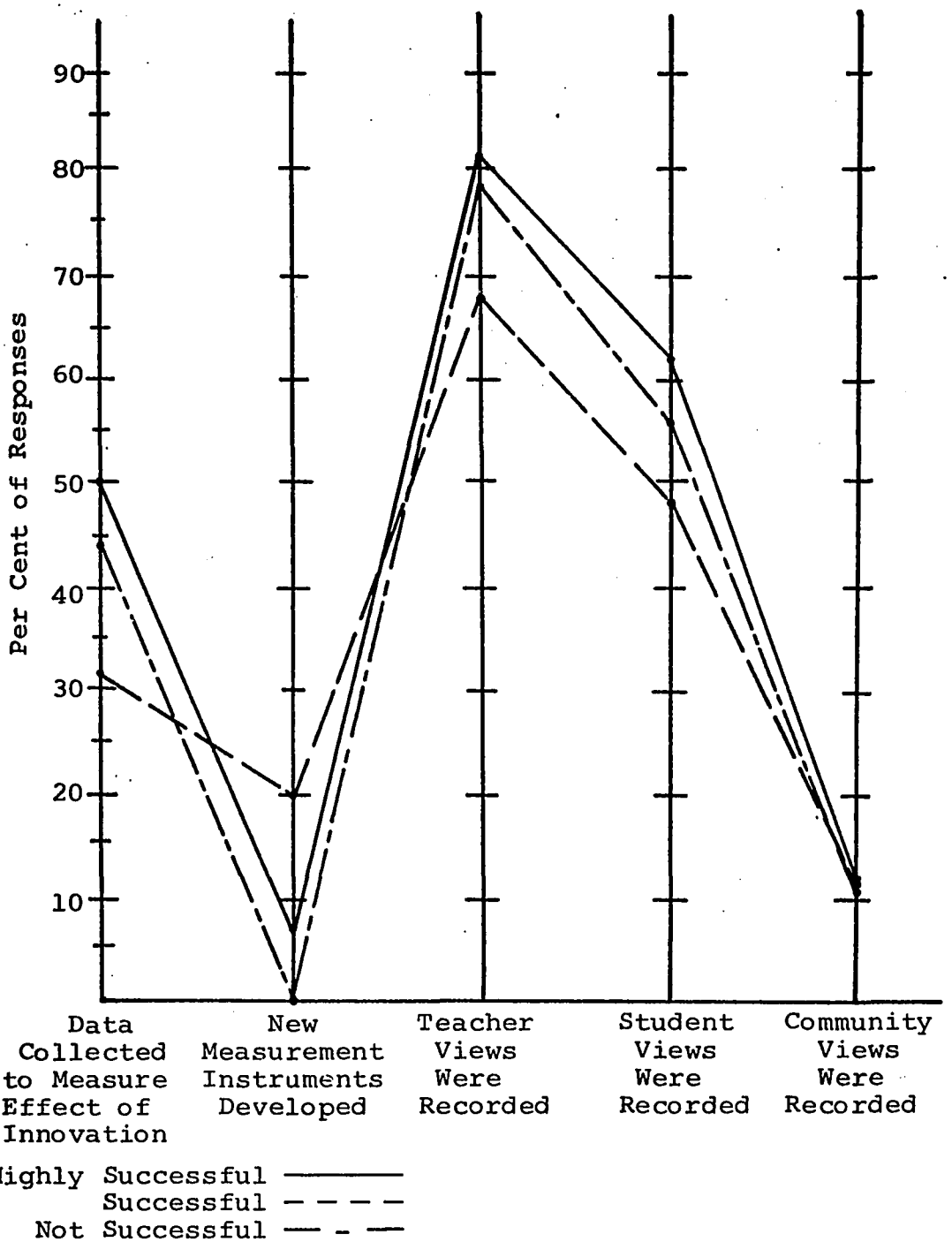

Figure 35. Curricular--What was Included in the Evaluation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

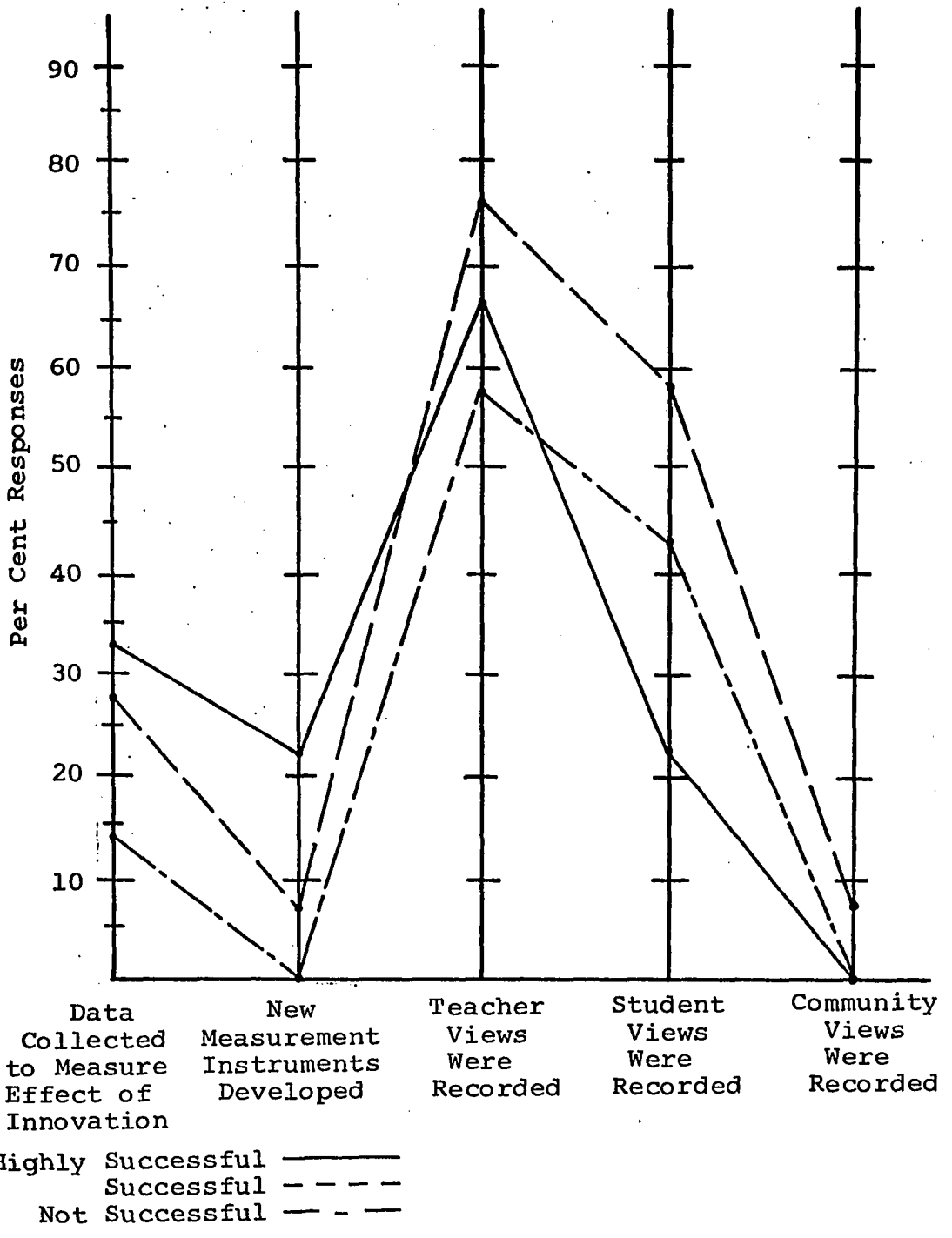

Figure 36. Technological--What was Included in the Evaluation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

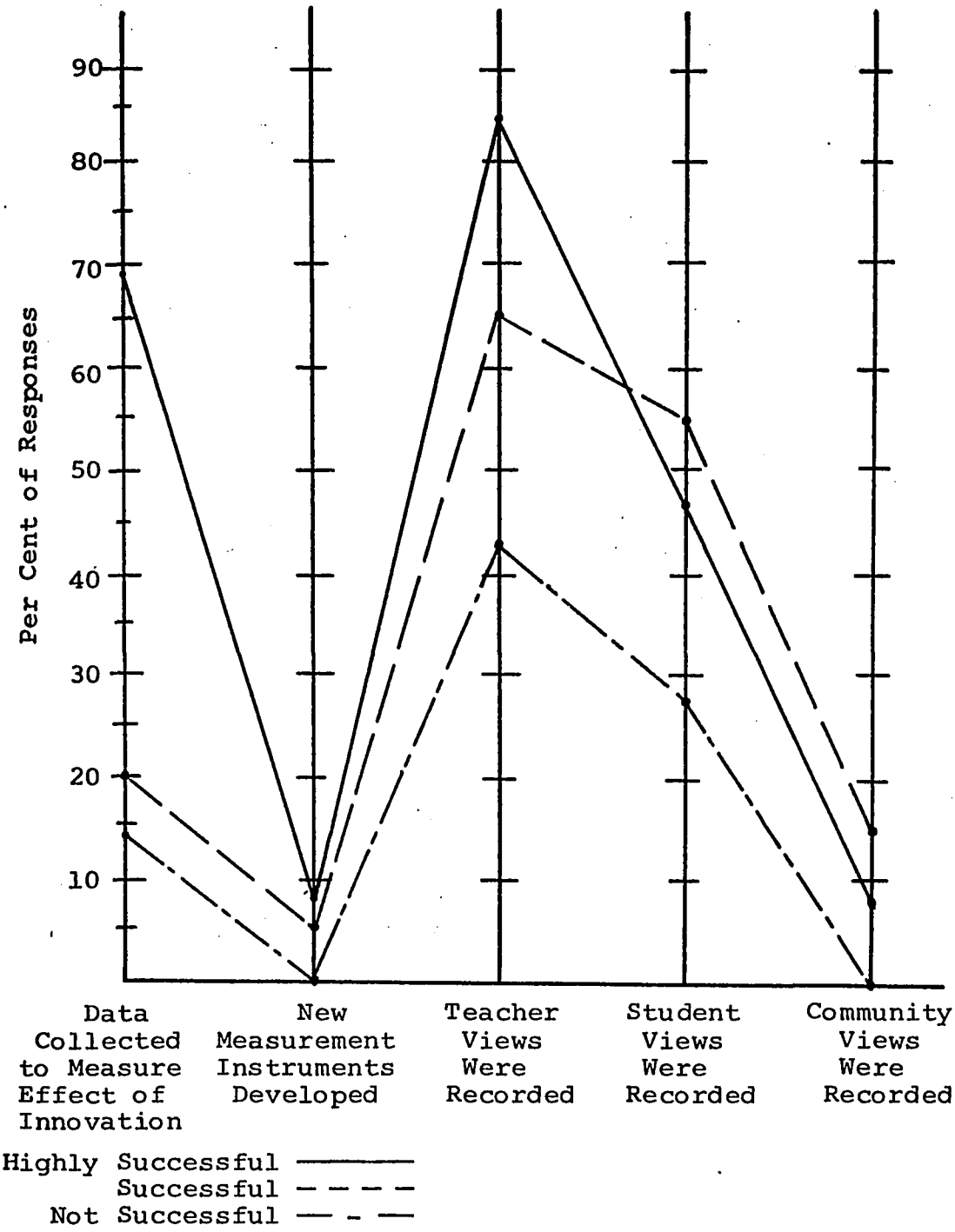

Figure 37. Organizational--What was Included in the Evaluation of the Innovation? -- Utilization of variables during planning and implementation of highly successful, successful, and not successful innovations.

$$z = \frac{P_1 - P_2}{\sqrt{pq\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}} \qquad 2$$

The "z" value obtained may be interpreted from the normal curve with a "z" value of 1.96 required for significance at the .05 level of confidence using a two-tailed test.

The question of how large the sample size should be and how far the proportion should depart from extreme values before the "z" value can be interpreted as significant is of concern in this study. Ferguson presents an arbitrary rule. If the smaller value of "p" or "q" multiplied by the smaller value of N exceeds five, then the ratio may be interpreted with reference to the normal curve.[3] Application of this rule to the data in this study suggests that the sample size is too small to interpret the "z" value from the normal curve. The variable "To meet specific needs of students" yields a significant "z" value for the curriculum category, but application of Ferguson's arbitrary rule produces a value of 2.5 which is less than the five required by the rule.

Consideration was given to grouping the data of the curricular, technological, and organizational categories to satisfy the rule. The variable "To meet specific needs of

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2. Ibid., p. 177.

3. Ibid., pp. 177-178.

students" with the categories grouped, yields a significant "z" value. Application of the rule to data for this variable produces a value of 4.6 which is still less than the five required by Ferguson's arbitrary rule.

The decision was made not to group the data for the three categories for two reasons. One, too much information about the innovations would be lost and second, the arbitrary rule would still not be satisfied. Therefore, the statistical tests were done separately by categories using the same data that were graphed in Figures 2 through 37. The differences that are statistically significant appear to be quite evident on the graphs and seem to correlate with general observations. Even though the sample size does not meet the arbitrary rule established by Ferguson, the statistical tests of significance may reveal trends in the data to support the innovations.

The three null hypotheses were tested for each variable utilized during the innovative process.

Hypothesis 1

There is no significant difference in the extent of utilization of selected variables during the innovative process between curricular innovations rated highly successful and curricular innovations rated not successful.

Hypothesis 2

There is no significant difference in the extent of utilization of selected variables during the innovative process between technological innovations rated highly successful and technological innovations rated not successful.

Hypothesis 3

There is no significant difference in the extent of utilization of selected variables during the innovative process between organizational innovations rated highly successful and organizational innovations rated not successful.

The testing of the null hypotheses is presented in Table VII for each variable by the curricular, technological, and organizational categories. No variable was found statistically significant for more than one of the three categories.

The null hypothesis for the curricular category was rejected by the variable "To meet specific needs of students." It was used as a reason for proposing the innovation by a greater proportion of innovations rated highly successful than by innovations rated not successful.

The question concerning the per cent of teaching staff involved in the initial planning and implementation of the innovation yields two significant differences.

Table VII. Testing of Null Hypotheses

Questions and Variables	Level of Significance		
	Curricular	Techno-logical	Organiza-tional
1. Why was the innovation proposed?			
a. To meet specific needs of students.	.05	N/S	N/S
b. To improve teaching techniques.	N/S	N/S	N/S
c. To improve the curriculum.	N/S	N/S	N/S
d. To improve staff communication.	N/S	N/S	N/S
2. By whom was the innovation proposed?			
a. District Superintendent	N/S	N/S	N/S
b. District Curriculum Specialist	N/S	N/S	N/S
c. Building Principal	N/S	N/S	N/S
d. Classroom Teacher(s)	N/S	N/S	N/S
3. What did the person responsible for planning a study of the innovation do?			
a. Consulted with specialists.	N/S	N/S	N/S
b. Visited model schools.	N/S	N/S	N/S
c. Coordinated committee work.	N/S	N/S	N/S
d. Met with groups.	N/S	N/S	N/S

Table VII.--Continued Testing of Null Hypotheses

Questions and Variables	Level of Significance		
	Curricular	Techno-logical	Organiza-tional
e. Collected invormation on materials avail-able.	N/S	N/S	N/S
4. What per cent of the Teaching Staff was in-volved in the initial planning and implementa-tion of the innovation?			
a. None.	N/S	N/S	.05
b. Less than 10%.	.05	N/S	N/S
c. From 10% to 50%.	N/S	N/S	N/S
d. More than 50%.	N/S	N/S	N/S
5. In what ways were the initial teachers in-volved in the planning and implementation of the innovation?			
a. Visited other schools.	N/S	N/S	N/S
b. Given released time during the school day.	N/S	N/S	N/S
c. Attended workshops.	N/S	N/S	N/S
d. Involved in committee meetings or individual work outside of the school day.	.05	N/S	N/S

Table VII.--Continued Testing of Null Hypotheses

Questions and Variables	Level of Significance		
	Curricular	Techno-logical	Organiza-tional
6. What per cent of the student body was involved in the initial planning and implementation of the innovation?			
a. None.	N/S	N/S	N/S
b. Less than 10%.	N/S	N/S	N/S
c. From 10% to 50%.	N/S	N/S	N/S
d. More than 50%.	N/S	N/S	N/S
7. In what way were the students involved in the initial planning and implementation of the innovation?			
a. Given the opportunity to express their views through open meetings.	N/S	N/S	N/S
b. Replied to a questionnaire.	N/S	N/S	N/S
c. Served on a planning committee.	N/S	N/S	N/S
8. Was the community involved in the initial planning and implementation of the innovation?			
a. No.	N/S	N/S	N/S
b. Yes.	N/S	N/S	N/S

Table VII.--Continued Testing of Null Hypotheses

Questions and Variables	Level of Significance		
	Curricular	Techno-logical	Organiza-tional
9. In what was were members of the community involved in the initial planning and implementation of the innovation?			
a. Given the opportunity to express their views through open meetings.	N/S	.05	N/S
b. Replied to a questionnaire.	N/S	N/S	N/S
c. Served on a planning committee.	N/S	.05	N/S
10. In what way did the district superintendent support this innovation?			
a. Expressed his interest in the innovation to the staff.	N/S	N/S	N/S
b. Sought school board support for the innovation.	N/S	N/S	N/S
c. Made available district office support for the innovation.	N/S	N/S	N/S
d. Gave press releases in support of the innovation.	N/S	N/S	N/S
e. Actively participated in the planning of the innovation.	N/S	N/S	.05

Table VII.--Continued Testing of Null Hypotheses

Questions and Variables	Level of Significance		
	Curricular	Techno-logical	Organiza-tional
11. How was financial support provided?			
a. None needed or asked for.	N/S	N/S	.05
b. District appropriated funds.	N/S	N/S	N/S
c. Federal funds were used.	N/S	N/S	N/S
d. State funds were used.	N/S	N/S	N/S
12. What was included in the evaluation of the innovation?			
a. Data were collected to measure the effect of the innovation.	N/S	N/S	.05
b. New measurement instruments were developed.	N/S	N/S	N/S
c. Teacher views were recorded.	N/S	N/S	N/S
d. Student views were recorded.	N/S	N/S	N/S
e. Community views were recorded.	N/S	N/S	N/S

N/S = Not significant.

First in the organizational category it was reported that no innovations rated highly successful had any of the teaching staff involved while for four of the seven innovations rated not successful it was reported that none of the teaching staff was involved. In the curricular category it was reported that a greater proportion of innovations rated not successful had less than 10% of the teaching staff involved than innovations rated highly successful.

One significant difference is found in the curricular category regarding the ways in which the initial teachers were involved in the planning and implementation of the innovation. It was reported that teachers were involved in committee meetings or individual work outside of the school day in a greater proportion of innovations rated highly successful than in innovations rated not successful.

Two significant differences favoring the innovations rated not successful are found in the technological category under the question "In what way were members of the community involved in the initial planning and implementation of the innovation?" The variables "Given the opportunity to express their views through open meetings" and "Served on a planning committee" were utilized in two of the five innovations rated not successful. These variables were not utilized in planning and implementing the nine innovations rated highly successful. The very small sample size

may cause one to question the significance of this difference.

The question "In what way did the district superintendent support this innovation?" yields one significant difference for the organizational category. The superintendent actively participated in the planning of seven out of thirteen innovations rated highly successful. He did not actively participate in the planning of the seven innovations rated not successful.

A significant difference favoring the innovations rated not successful is found in the organizational category under the question "How was financial support provided?" Five of the seven organizational innovations rated not successful were reported to have not needed or asked for financial support. The majority of innovations rated highly successful received funds from the district or other sources, while only four of the thirteen innovations rated highly successful did not need or ask for funds.

The question "What was included in the evaluation of the innovation?" yields one significant difference in the organizational category. The variable "Data were collected to measure the effect of the innovation" was utilized in nine of thirteen innovations rated highly successful while only one of seven innovations rated not successful reported the collection of data.

Summary

Two survey instruments were used to obtain data for this study. The first survey instrument was sent to 148 Arkansas high schools to determine the number of specific innovations implemented during the school years 1959-60 through 1969-70. A total of 366 innovations currently operating and fifty-three innovations no longer currently operating were reported by eighty-three high school principals.

Of the innovations currently operating in the curricular category, the subject area of English was reported as having the highest number of innovations. The use of a language laboratory was reported most frequently in the technological category while honor study halls and work-study programs were both reported by the largest number of schools in the organizational category.

Mathematics represented the largest number of innovations no longer currently operating in the curricular category. Few innovations were abandoned in the technological category, but language laboratories were reported the most often. Honor study halls were reported as abandoned most frequently in the organizational category.

A second survey instrument was mailed to schools reporting innovations currently operating or no longer operating. From seventy high school principals, 133 survey instruments were returned with data on the utilization of

selected variables during the implementation of the innovations reported. The innovations were fairly equally divided among the curricular, technological, and organizational categories. Ratings of highly successful, successful, or not successful by the principal from the first survey instrument were used to sub-divide the data into three groups within each category. These groups were not equally divided with the majority of innovations falling into the successful rating.

The responses to each question concerning the planning and implementation of innovations were analyzed graphically and statistically to determine any differences in the utilization of the variables between innovations rated highly successful and innovations rated not successful. A "z" test was used to test the null hypotheses at the .05 level of confidence using a two-tailed test. Concern was expressed about the small sample size. The significance of the statistical tests should be interpreted with this in mind.

The responses to the question "Why was the innovation proposed?" indicated that the reason "To meet the specific needs of students" was given for a significantly greater proportion of curricular innovations rated highly successful than curricular innovations rated not successful. This variable was utilized by all classifications of innovations in the technological and organizational categories.

The responses indicated that for curricular innovations, if specific student needs were considered in the planning and implementation of the innovation, it would more likely be rated highly successful than not successful by the principals.

There was no statistical difference in the responses between innovations rated highly successful and innovations rated not successful to the question "By whom was the innovation proposed?" The superintendent's proposal of organizational innovations appeared to be related to the innovations rated highly successful as displayed graphically in Figure 7. The responses to the question "In what way did the district superintendent support this innovation?" indicated that the superintendent actively participated in the planning of a significantly greater proportion of organizational innovations rated highly successful than organizational innovations rated not successful. The influence of the district superintendent was apparent in the organizational innovations rated highly successful by principals.

A significant proportion of the responses to the question of teaching staff involvement indicated that organizational innovations rated not successful had no staff involvement as contrasted by organizational innovations rated highly successful. Curricular innovations rated not successful had less than ten per cent of the staff involved in the

initial planning and implementation in a significantly greater proportion of responses than curricular innovations rated highly successful. Responses indicate that curricular and organizational innovations rated not successful were implemented with little or no teaching staff involvement.

Responses indicated that in the curriculum category teachers were involved in a significantly greater proportion of innovations rated highly successful than innovations rated not successful by way of committee meetings or individual work outside of the school day. This variable, "Work outside of the school day," was indicated as the most frequent means of teachers becoming involved in technological and organizational innovations but it was not related to the success ratings in those categories.

There was very little student involvement indicated by the responses in all three categories of innovations. When students were involved, the most frequently used method was through open meetings.

Community involvement was limited for innovations reported. However, in the category of technological innovations two significant differences favored the innovations rated not successful for the variables "Expressing their views through open meetings" and "Serving on a planning committee."

Responses to the question "How was financial support provided?" indicated that none was needed or asked for in a

significantly greater proportion of organizational innovations rated not successful than for organizational innovations rated highly successful. No funds were needed for the majority of curricular innovations whereas district appropriated funds were used for most of the technological innovations.

The responses to the question "What was included in the evaluation of the innovation?" followed a similar pattern for the three categories of innovations with one exception. The variable "Data were collected to measure the effect of the innovation" was utilized for a significantly greater proportion of organizational innovations rated highly successful than for organizational innovations rated not successful.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is divided into three sections. Section one includes a brief summary of the study. Section two contains the conclusions derived from the analysis of the data. Section three presents recommendations for further study.

Summary

Change has become a way of life for educators in today's society. Schools have tended to reflect the changes of society in their educational programs. However, change itself is not a suitable criterion for evaluating today's schools. There is a need to measure the effectiveness of innovations and isolate the variables that may affect the innovations as they are implemented.

Studies have been conducted to determine the number of innovations implemented in secondary schools of the United States. The factors relative to the retention or abandonment of innovations have been investigated. This study explores the relationship between the degree of success of educational innovations as rated by high school principals and the utilization of selected variables during the implementation of the innovations.

There were two steps in the process of this investigation of innovations. The first step was to ascertain the status of innovations and their degree of success in Arkansas high schools accredited by the North Central Association. The second step was to identify the variables which were utilized during the implementation process for selected innovations.

A survey instrument was developed along the format utilized by Gordon Cawelti in 1966. The purpose of the first survey was to determine which innovations had been implemented during the school years 1959-60 through 1969-70. Principals also rated the degree of success of the innovations that they reported in the survey. Innovations were categorized as curricular, technological, and organizational.

The first survey instrument was sent to 148 Arkansas high schools accredited by the North Central Association. Eighty-three high schools returned the first survey instrument with seventy-six of these schools reporting a total of 366 innovations currently operating and fifty-three innovations no longer currently operating.

The largest number of innovations currently operating were reported in the curricular category (162). Within this category the English program was reported as having the highest number of innovations (twenty-six). In the technological category, the use of a language laboratory (forty-seven) was reported most frequently. Honor study

halls (twenty) and work-study programs (twenty) were reported most often in the organizational category of innovations as currently operating.

Nine schools reported honor study halls no longer currently operating and eight schools reported mathematics programs that had been abandoned. This represented approximately one-third of the innovations reported as no longer currently operating.

A second survey instrument was designed to identify variables or practices which were utilized during the innovative process. An advisory committee of fourteen professional educators was selected to evaluate the variables included in the preliminary draft of the second survey instrument. The variables were the responses to twelve questions concerning the innovative process on the second survey.

The second survey instrument was sent to the seventy-six schools that reported innovations on the first survey and a modified form was sent to the sixty-five schools that did not respond to the first survey instrument. Each school was asked to report on one innovation from each of the three categories, curricular, technological, and organizational. Sixty-five of the first seventy-six schools reporting innovations responded and five of the sixty-five schools reported innovations for the first time. This made up a sample of seventy Arkansas high schools reporting on the

utilization of variables during the implementation of 133 innovations.

The data were key punched on data processing cards and sorted to obtain the number of innovations rated highly successful, successful, and not successful within the curricular, technological, and organizational categories of innovations. Figures 2 through 37 illustrate the per cent of responses for each rating of success to the twelve questions in the second survey instrument. A "z" test was completed on each variable or response to the survey question to determine significant statistical difference in the utilization of the variable during the implementation of innovations rated highly successful and those rated not successful.

A statistical significant difference was found in nine of the 141 cases illustrated in Table VII. The null hypothesis was rejected for these nine variables.

Variables utilized for a significantly greater proportion of curricular innovations rated highly successful than for curricular innovations rated not successful were concerned with student needs and teaching staff involvement. The consideration of the specific needs of students in the proposing of curricular innovations was related to those innovations rated highly successful. Curricular innovations rated not successful had less than ten per cent of the teaching staff involved in the initial planning and

implementation. A method of involvement for teachers was through committee meetings or individual work outside of the school day. This variable was related to curricular innovations rated highly successful.

Community involvement by way of "expressing their views through open meetings" and "serving on a planning committee" were utilized for technological innovations rated not successful.

Four variables were found significant in the organizational category. Organizational innovations rated not successful had no staff involvement in the initial planning and implementation. The response that no funds were needed or asked for was related to organizational innovations rated not successful. When data were collected to measure the effect of the innovation it related to organizational innovations rated highly successful. The district superintendent actively participating in the planning of the innovation was related to organizational innovations rated highly successful.

Conclusions

The following conclusions were based on data received from schools participating in this study.

1. The consideration of specific needs of students in proposing curricular innovations influences the success of the innovation. This study showed that

curricular innovations rated highly successful were proposed with specific student needs under consideration.

2. The involvement of the teaching staff in the initial planning and implementation of curricular and organizational innovations is related to the success of the innovation. In this study, innovations rated not successful had very little teacher involvement in comparison with innovations rated highly successful.
3. Teachers are involved through committee meetings or work outside of the school day in planning curricular innovations. Other methods of involvement, visiting other schools, given released time, and attending workshops were not utilized to any extent.
4. Organizational innovations tend to be successful if the district superintendent actively participates in the planning. It was shown in this study that the superintendent's proposal of an organizational innovation influenced the success of the innovation. This statistical test produced a "z" value of 1.91, which did not reach the 1.96 value needed for the .05 level of significance. The superintendent can influence the success of organizational innovations to a greater extent than was indicated with curricular or technological innovations.

5. Federal and state financing of the innovations does not influence the success. The condition of not needing or asking for funds to implement organizational innovations rated not successful was related in this study. Funding from the district places an investment in the innovation and may encourage success.
6. Organizational innovations evaluated through the collection of data to measure their effect are more likely rated highly successful. Being aware of an evaluation procedure and collecting data may improve the chance for success.
7. Secondary schools have provision for very little student or community involvement in the initial planning and implementation of the innovation.
8. Technological innovations rated not successful seem to have more community involvement than those rated highly successful. This pattern, as evidenced in this study, is contrary to the general concept that involvement is good for the success of the innovation.

Recommendations

In light of the findings and conclusions of this study, certain recommendations are appropriate. The

recommendations are presented as (1) general recommendations and (2) recommendations for further study.

General Recommendations

Based upon the general conclusions of this study it is recommended that school districts organize task forces composed of students, teachers, and community representatives to consider innovations. These task forces, directed by the administration, would result in active involvement groups which could aid in developing an effective procedure for evaluating the innovation.

The district superintendent should make every effort possible to actively participate in the planning of organizational innovations. These innovations are usually more open for public scrutiny and consequent evaluation and therefore need his attention.

Recommendations for Further Study

Several areas of study which need further exploration are identified here.

1. Studies similar to this study should be conducted in other geographic areas to determine the relationship between the utilization of selected variables to the degree of success of innovations.
2. Additional studies should be concentrated on each specific category of innovations. Instruments

should be developed to suit each category of innovations.

3. A different method of rating the success of innovations should be explored. For the purpose of this study, the school principal was responsible for making the success ratings. A more objective system of rating might be developed.
4. More study is needed to determine the influence of community involvement on the success of innovations.

APPENDIX A

FIRST SURVEY INSTRUMENT

Mr. Carlson is conducting this survey in connection with his doctoral dissertation work. It is one of several coordinated studies currently in progress in different parts of the country.

However, I want to make perfectly clear to all superintendents and principals that whether or not anyone participates in the survey is wholly and totally a decision to be voluntarily made by each superintendent and principal concerned.

The survey could give valuable information about innovations that are being and have been conducted by NCA Member Schools in Arkansas which Mr. Carlson will make available to the State Department of Education and to participants.

In no case will the name of individuals or individual schools appear in the final data revealed by the survey.

Let me stress again that your participation in this survey is completely voluntary.

Sincerely,

Curtis R. Swaim
Associate Commissioner
for Instructional Services
and North Central Representative

CRS:sn

1034 East Adams
Tucson, Arizona

Educators have become increasingly involved with the emphasis on change in education. The innovative activities within American schools have received much attention in the literature and educational meetings. There is some question, however, as to the degree that evaluation of the extent and effect of innovations has kept pace.

You may recall a survey by Dr. Gordon Cawelti, Executive Secretary of the North Central Association, that was completed in 1966. His survey was restricted to 27 selected innovations and the average number of these innovations per high school was 3.3 for the 142 Arkansas high schools that responded.

An attempt is now being made to update and extend aspects of this study. Your help is requested in this study, which is one of a series planned in different areas of the nation, in providing very necessary information concerning innovations in your school. You are asked to report any planned educational change that has been made in your school since the 1959-60 school year. This will result in a better indication of what the status of innovations is within Arkansas.

In addition, as a part of this survey, you are asked to evaluate the degree of success of each innovation that you report even if it is no longer in operation. The evaluation of each innovation may take account of how well the goals and objectives for that innovation were met.

The information received will of course be kept confidential. Individual schools will not be identified, but rather the status of innovations in the total number of schools reporting.

We recognize that this is an imposition on your valuable time, but we hope that you will find it possible to complete this questionnaire at you earliest convenience. Schools responding will receive a copy of the report at the conclusion of the study. A stamped, self-addressed envelope is enclosed for your convenience in answering.

We appreciate your help and consideration in this important matter.

Sincerely yours,

RAC:sn
enclosures

Robert A. Carlson

Name of principal or person reporting_____

Name of High School_____

_____

Address City Zip Code

PART I: Place an "X" on the line opposite the category that best describes your high school.

A. Current high school enrollment

___Fewer than 300
___300 to 500
___500 to 1,000
___1,000 to 2,000
___More than 2,000

B. Average annual per-pupil expenditure

___Less than $300
___$300 to $400
___$400 to $500
___$500 to $600
___$600 to $700
___More than $700

PART II: The innovations being surveyed are those introduced during the school years 1959-60 through 1969-70. Include those implemented that are still in operation and those implemented that are no longer in operation.

The innovations are divided into three categories: Curricular, technological, and organizational. Space is provided at the end of each section for additions. A list of definitions used for the specific innovations is included for your use.

DIRECTIONS:

1. Under the curricular section write in the specific practice and other additions as necessary to all three categories of this survey.

2. Write in the year the innovation was implemented.

3. Check column three if the innovation is currently operating in your high school.

4. Check your rating of the degree of success of each innovation.

Highly successful--The objectives of the innovation were met and there was a positive change.

Successful--	Not all of the objectives were met and there was some positive change.
Not successful--	There was no change as a result of the innovation.
Failure--	There was a negative change as a result of the innovation.

A. Curricular Innovations	Year begun (1959 on)	Check if Currently Operating	Highly Successful	Successful	Not Successful	Failure
1. Physics (i.e., PSCS)						
2. Chemistry (i.e., Chem Study)						
3. Mathematics (i.e., SMSG)						
4. English						
5. Humanities						
6. Social Studies						
7. Fine Arts						
8. Practical Arts						
9. Other Curricula Programs						

B. Technological Innovations	Year begun (1959 on)	Check if Currently Operating	Highly Successful	Successful	Not Successful	Failure
1. Television instruction						
2. Programmed instruction						
3. Teaching machines						
4. Language laboratory						
5. Data processing equipment						
6. Telephone amplification						
7. Simulation or gaming						
8. Other technological innovations						

C. Organizational Innovations	Year begun (1959 on)	Check if Currently Operating	Highly Successful	Successful	Not Successful	Failure
1. Flexible scheduling						
2. Team teaching						
3. College credit courses						
4. Teacher aides--paraprofessionals						
5. Honor study halls						
6. Work-study program						
7. School-within-school						
8. Cultural enrichment programs						
9. Student exchange program						
10. Optional class attendance						
11. Extended school year						
12. Other organizational innovations						

Definitions Used

A. Curricular Innovations: One or more classes using as a basic reference a set of materials or course outline that was regarded as being innovative. They may be locally prepared.

B. Technological Innovations:

1. Television Instruction: One or more classes regularly using open or closed circuit television as a means of teaching courses for credit.

2. Programmed Instruction: A course designed for independent use in which students regularly use programmed materials (without a machine).

3. Teaching Machine: A mechanical device which presents a computerized educational program designed to teach a student.

4. Language Laboratory: One or more foreign language classes use tapes and tape recorders to help the audio-lingual method of teaching.

5. Data Processing Equipment: Electronic accounting machines and computers are used for class scheduling, reporting marks, attendance, accounting, and so forth.

6. Telephone Amplification: One or more classes periodically arrange to amplify telephone conversations dealing with information being studied in class.

7. Simulation or Gaming: One or more classes periodically use a device to create realistic political or social situations in class for helping students to become involved in decision-making.

C. Organizational Innovations:

1. Flexible Scheduling: The school operates on a variable schedule which starts with modules of 5 to 20 minutes and organizes the day into various combinations of these modules according to the different learning environments required.

2. Team Teaching: A course under the direction of two or more faculty members, all of whom participate directly in planning and meeting the class sessions.

3. College Credit Courses: High school students take advanced placement courses and examinations, or a similar kind of arrangement, whereby credit is given for college level courses.

4. Teacher Aides--Paraprofessionals: Use of non-degree persons for assisting teachers in essentially non-teaching duties such as evaluating student compositions, supervising halls, or checking papers.

5. Honor Study Halls: No teachers present in study halls; sometimes monitored by students.

6. Work-Study Program: A plan for integration of classroom work and practical experience through alternative attendance at class and employment in business, industry, or government. Distributive education programs may also be counted.

7. School-Within-School: An organizational design whereby a large secondary school is divided into smaller schools each having its own administration.

8. Cultural Enrichment Programs: A regular program attempting to expose students to elements of society outside the school such as concerts, lectures, and museums.

9. Student Exchange Program: At least one foreign student has attended your school for a year, and one of your students has spent a year in an overseas school as a part of an exchange program.

10. Optional Class Attendance: An attempt to encourage independent study by permitting students to have a choice as to whether or not they will attend class regularly.

11. Extended School Year: The total number of days students attend school (exclusive of summer sessions) is in the area of 200 days or more, or at least approximately two weeks in excess of what may be legally required.

APPENDIX B

MEMBERS OF THE ADVISORY COMMITTEE

1. Mr. Julius Adams, Assistant Superintendent, Arkadelphia Public Schools, Arkadelphia, Arkansas.

2. Dr. Phil Barck, Field Services Representative, EPIC Evaluation Center, Tucson, Arizona.

3. Dr. Arthur D. Dambacher, Coordinator of Evaluation, Berkeley Unified School District, Berkeley, California.

4. Mr. Maruice Dunn, Assistant Superintendent, Hot Springs Public Schools, Hot Springs, Arkansas.

5. Mr. William R. Hall, Principal, Hoover School, Dubuque, Iowa.

6. Reverend Michael T. Krank, Superintendent, Emmons Central High School District, Strasburg, North Dakota.

7. Dr. Charles Manning, Assistant Professor of Education, State College of Arkansas, Conway, Arkansas.

8. Dr. Richard H. Powell, Field Services Representative, EPIC Evaluation Center, Tucson, Arizona.

9. Dr. Jerald Reece, Head, Elementary and Secondary Education Department, New Mexico State University, Las Cruces, New Mexico.

10. Mrs. Elizabeth M. Rueck, Chairman, Science Department, Barrington Consolidated High School, Barrington, Illinois.

11. Dr. Fay W. Smith, Director, Region VIII Education Service Center, Magnolia, Arkansas.

12. Mr. Ray Weidner, Director, Modular Scheduling, Hopkins High School, Hopkins, Minnesota.

13. Dr. Harry M. Wenner, Secondary Curriculum Coordinator, Technical High School, St. Cloud, Minnesota

14. Dr. Sanford Witter, Superintendent, Mounds View Public Schools, St. Paul, Minnesota.

APPENDIX C

SECOND SURVEY INSTRUMENT

April 24, 1970

The help you have given in providing information concerning the extent of innovations within high schools accredited by the North Cen ral Association is very much appreciated.

In order to complete the study meaningfully, it is now necessary to secure and tabulate further information on the innovative process using the enclosed checklist. By using a sampling process, only one innovation from each of the three categories will be referred to. Please consider the innovation listed at the top of the sheet and answer the questions regarding practices which may have been used during the initial planning and implementation of this innovation.

We appreciate the completion of this checklist at your earliest convenience. A stamped, self-addressed envelope is enclosed.

The information secured will be kept confidential and individual schools will not be identified. A summary of the findings of the study will be sent to you when it is completed.

Thank you very much for your help.

Sincerely,

Robert A. Carlson

RAC:sn
enclosure

The following innovation was reported in your school:

Place a check mark (✓) by the answer or answers that apply to the innovation specified above. Please note that where it is preferred, several answers may be checked for some questions.

1. Why was the innovation proposed?

___To meet specific needs of students
___To improve teaching techniques
___To improve the curriculum
___To improve staff communication
___ _____ (Other)

2. By whom was the innovation proposed?

___District Superintendent
___District Curriculum Specialist
___Building Principal
___Assistant Building Principal
___Classroom Teacher(s)
___ _____ (Other)

3. What did the person responsible for planning a study of the innovation do?

___Consulted with specialists
___Visited model schools
___Coordinated committee work
___Met with groups
___Collected information on materials available
___ _____ (Other)

4. What per cent of the Teaching Staff was involved in the initial planning and implementation of the innovation?

___None (If checked, go to #6.)
___Less than 10%
___From 10% to 50%
___More than 50%

5. In what ways were the initial teachers involved in the planning and implementation of the innovation?

___Visited other schools
___Given released time for committee meetings or individual work during the school day
___Attended workshops
___Involved in committee meetings or individual work outside of the school day

___ _____
(Other)

6. What per cent of the student body was involved in the initial planning and implementation of the innovation?

___None (If checked, go to #8.)
___Less than 10%
___From 10% to 50%
___More than 50%

7. In what ways were the students involved in the initial planning and implementation of the innovation?

___Given the opportunity to express their views through open meetings
___Replied to a questionnaire
___Served on a planning committee

___ _____
(Other)

8. Was the community involved in the initial planning and implementation of the innovation?

___No (If checked, go to #10.)
___Yes

9. In what way were members of the community involved in the initial planning and implementation of the innovation?

___Given the opportunity to express their views through open meetings
___Replied to a questionnaire
___Served on a planning committee

___ _____
(Other)

10. In what way did the district superintendent support this innovation?

___Expressed his interest in the innovation to the staff
___Sought school board support for the innovation
___Made available district office support for the innovation
___Gave press releases in support of the innovation
___Actively participated in the planning of the innovation
___ _____ (Other)

11. How was financial support provided?

___None needed or asked for
___District appropriated funds
___Federal funds were used
___State funds were used
___ _____ (Other)

12. What was included in the evaluation of the innovation?

___Data were collected to measure the effect of the innovation
___New measurement instruments were developed
___Teacher views were recorded
___Student views were recorded
___Community views were recorded
___ _____ (Other)

13. Please list below any practices for implementing this innovation that have not been included:

APPENDIX D

FOLLOW-UP LETTER TO FIRST SURVEY INSTRUMENT

1034 East Adams
Tucson, Arizona

A few weeks ago, your help was requested by the completion of a brief survey instrument relative to the status of innovation in Arkansas high schools accredited by the North Central Association. Perhaps you did not receive the survey or with so many demands on your time you did not find it possible to complete and return it. We realize that the duties of a principal are pressing and that your time is valuable, but we hope that you will find it possible to complete the survey and return it soon.

This survey is one of a series planned in different areas of the nation and your response is needed to obtain important information concerning innovative programs. Because of its importance, we hope that we can impose upon you to complete the survey. This is, of course, voluntary on your part, but we need your help in this project.

I am enclosing another su vey instrument and a stamped, self-addressed envelope for your convenience in answering.

Thank you for your help.

Sincerely yours,

Robert A. Carlson

RAC:sn
enclosure

APPENDIX E

FOLLOW-UP LETTER TO SECOND SURVEY INSTRUMENT

May 13, 1970

A few weeks ago, your help was requested by the completion of a checklist relating to innovations that were reported in an earlier survey. Perhaps you did not receive the checklist or you did not find it possible to complete it with so many demands upon your time. We realize that your time is valuable, but we hope that you will find it possible to complete the checklist and return it soon.

It is important to determine the extent that certain practices were utilized during the planning and implementation of innovations to search for a pattern of success within the innovative process. The completion of the checklist is voluntary on your part, but we need your help in this project.

I am enclosing another survey instrument and a stamped, self-addressed envelope for your convenience in answering.

Thank you for your help.

Sincerely,

Robert A. Carlson

RAC:sn
enclosures

APPENDIX F

COMBINED FORM OF THE FIRST AND SECOND SURVEY INSTRUMENT

April 28, 1970

The survey of innovations has received reasonably good response. We hope you will find it possible to participate in this second stage of the survey. This is an opportunity to share your experiences with other principals of high schools accredited by the North Central Association in Arkansas.

It is of increasing importance to determine what there is in the innovative process that may be basic to the success of innovations. Checklists are provided for reporting the practices that may have been utilized during the initial planning and adoption of the innovation. You may report on an innovation that you feel was very successful and then report on an innovation you feel was not particularly successful. We hope to determine relationships between the practices utilized and the success of the innovation.

Your response is, of course, voluntary on your part; but we need your help in this project. A stamped, self-addressed envelope is enclosed for your convenience.

The information secured will be kept confidential and individual schools will not be identified. A summary of the findings will be sent to you when it is completed.

Thank you very much for your help.

Sincerely,

Robert A. Carlson

RAC:sn
enclosures

Name of principal or person reporting_____

Name of High School_____

_____

Address City Zip Code

PART A: Place an "X" on the line opposite the category that best describes your high school.

1. Current high school enrollment

___Fewer than 300
___300 to 500
___500 to 1,000
___1,000 to 2,000
___More than 2,000

2. Average annual per-pupil expenditure

___Less than $300
___$300 to $400
___$400 to $500
___$500 to $600
___$600 to $700
___More than $700

PART B: Write in the name of any one innovation that has been implemented in your high school since 1959. You may include those implemented that are no longer in operation.

_____

(Curricular, Technological, or Organizational)

1. Is this innovation currently operating in your high school? ___yes ___no

2. Check your rating of the degree of success of this innovation.

___Highly successful--The objectives of the innovation were met and there was a positive change.

___Successful-- Not all of the objectives were met and there was some positive change.

___Not successful-- There was no change as a result of the innovation.

___Failure-- There was a negative change as a result of the innovation.

PART C: The following questions are directed toward practices that may have been utilized during the initial planning and adoption of the innovation.

Place a check mark (√) by the answer or answers that apply to the innovation you specified on page one. Please note that where it is preferred, several answers may be checked for some questions.

1. Why was the innovation proposed?
   - ___To meet specific needs of students
   - ___To improve teaching techniques
   - ___To improve the curriculum
   - ___To improve staff communication
   - ___ _____ (Other)

2. By whom was the innovation proposed?
   - ___District Superintendent
   - ___District Curriculum Specialist
   - ___Building Principal
   - ___Assistant Building Principal
   - ___Classroom Teacher(s)
   - ___ _____ (Other)

3. What did the person responsible for planning a study of the innovation do?
   - ___Consulted with specialists
   - ___Visited model schools
   - ___Coordinated committee work
   - ___Met with groups
   - ___Collected information on materials available
   - ___ _____ (Other)

4. What per cent of the Teaching Staff was involved in the initial planning and implementation of the innovation?
   - ___None (If checked, go to #6.)
   - ___Less than 10%
   - ___From 10% to 50%
   - ___More than 50%

5. In what ways were the initial teachers involved in the planning and implementation of the innovation?

___Visited other schools
___Given released time for committee meetings or individual work during the school day
___Attended workshops
___Involved in committee meetings or individual work outside of the school day

___ _____
(Other)

6. What per cent of the student body was involved in the initial planning and implementation of the innovation?

___None (If checked, go to #8.)
___Less than 10%
___From 10% to 50%
___More than 50%

7. In what way were the students involved in the initial planning and implementation of the innovation?

___Given the opportunity to express their views through open meetings
___Replied to a questionnaire
___Served on a planning committee

___ _____
(Other)

8. Was the community involved in the initial planning and implementation of the innovation?

___No (If checked, go to #10.)
___Yes

9. In what way were members of the community involved in the initial planning and implementation of the innovation?

___Given the opportunity to express their views through open meetings
___Replied to a questionnaire
___Served on a planning committee

___ _____
(Other)

10. In what way did the district superintendent support this innovation?

___Expressed his interest in the innovation to the staff
___Sought school board support for the innovation
___Made available district office support for the innovation
___Gave press releases in support of the innovation
___Actively participated in the planning of the innovation
___ _____ (Other)

11. How was financial support provided?

___None needed or asked for
___District appropriated funds
___Federal funds were used
___State funds were used
___ _____ (Other)

12. What was included in the evaluation of the innovation?

___Data were collected to measure the effect of the innovation
___New measurement instruments were developed
___Teacher views were recorded
___Student views were recorded
___Community views were recorded
___ _____ (Other)

13. Please list below any practices for implementing this innovation that have not been included:

APPENDIX G

STATUS REPORT OF INNOVATIONS

8151 Rawhide Trail
Tucson, Arizona 85715
May 21, 1970

Dear Principal:

The information concerning the extent of innovations within high schools accredited by the North Central Association has been tabulated. Enclosure number one indicates the percentage of schools reporting innovations currently operating. A total of 366 innovations were reported by 80 schools to yield an average of 4.6 innovations per high school. This is an increase over the average number of 3.3 innovations reported by Dr. Gordon Cawelti in 1966 for 142 Arkansas high schools responding to his survey of 27 selected innovations. The surveys were not identical and cannot be compared directly, but there certainly was a positive change.

Enclosure number two discloses the number of schools reporting innovations not currently operating. There were 53 innovations reported as not currently operating in the 80 high schools reporting. Approximately 12 per cent of the innovations implemented were not currently operating. The Cawelti survey revealed that 57 innovations were reported as being abandoned by the 142 schools responding to his survey. The total number of innovations reported was not known to calculate a percentage of innovations that were abandoned in 1966.

A second survey has been mailed and returned by all but 22 schools. It is an attempt to determine the extent that certain practices were utilized during the planning and implementation of innovations in a search for a pattern of success within the innovative process. Results on the information obtained in this survey will be mailed upon completion of the study.

Many thanks for your help.

Sincerely yours,

Robert A. Carlson

Percentage of Schools Reporting Innovations Currently Operating

Curricular Innovations

1.	Physics	15
2.	Chemistry	28
3.	Mathematics	29
4.	English	33
5.	Humanities	15
6.	Social Studies	23
7.	Fine Arts	28
8.	Practical Arts	21
9.	Other Programs	28

The 80 schools reported 162 curricular innovations currently operating for an average of 2 innovations per school

Technological Innovations

1.	Television Instruction	19
2.	Programmed Instruction	12
3.	Teaching Machines	16
4.	Language Laboratory	59
5.	Data Processing Equipment	3
6.	Telephone Amplification	5
7.	Simulation or Gaming	10
8.	Other Innovations	0

There were 99 technological innovations reported currently operating by the 80 schools reporting.

Organizational Innovations

1.	Flexible Scheduling	10
2.	Team Teaching	11
3.	College Credit Courses	8
4.	Teacher Aides	23
5.	Honor Study Halls	25
6.	Work-Study Programs	25
7.	School-Within-School	1
8.	Cultural Enrichment Programs	18
9.	Student Exchange Programs	5
10.	Optional Class Attendance	0
11.	Extended School Year	1
12.	Other Innovations	5

A total of 105 organizational innovations were operating by the 80 schools reporting.

ENCLOSURE 1

Number of Schools Reporting Innovations not Currently Operating

Curricular Innovations

1.	Physics	1
2.	Chemistry	4
3.	Mathematics	8
4.	English	2
5.	Humanities	1
6.	Social Studies	2
7.	Fine Arts	2
8.	Practical Arts	4
9.	Other Programs	0

A total of 24 curricular innovations were reported as not currently operating in the 80 schools reporting. This is 13% of the total number implemented.

Technological Innovations

1.	Television Instruction	2
2.	Programmed Instruction	1
3.	Teaching Machines	0
4.	Language Laboratory	4
5.	Data Processing Equipment	0
6.	Telephone Amplification	1
7.	Simulation or Gaming	0
8.	Other Innovations	0

There were 8 technological innovations reported as not currently operating by 80 schools reporting. This is 7% of the total number implemented.

Organizational Innovations

1.	Flexible Scheduling	0
2.	Team Teaching	5
3.	College Credit Courses	0
4.	Teacher Aides	3
5.	Honor Study Halls	9
6.	Work-Study Programs	3
7.	School-Within-School	0
8.	Cultural Enrichment Programs	0
9.	Student Exchange Programs	1
10.	Optional Class Attendance	
11.	Extended School Year	0
12.	Other Innovations	0

A total of 21 organizational innovations were reported as not currently operating by the 80 schools. This is 17% of the total number implemented.

ENCLOSURE 2

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